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ABSTRACT

The 1980 Senate hearing focuses on federal programs for deaf and hearing impaired students. Thirteen prepared statements are presented from representatives of federal agencies (National Institute of Handicapped Research, Department of Education, and National Institute of Health); private associations (the Convention of American Instructors of the Deaf, American Speech-Language-Hearing Association, Alexander Graham Bell Association of the Deaf, Consumers Organization for the Hearing Impaired, Inc., and National Information Center for Quiet); and Gallaudet College. Statements touch on such issues as technology; hearing aid improvement; programs for the research and training centers; interpreter training; federal expenditures; vocational training; independent living; captioning; the impact of P.L. 94-142 (the Education for All Handicapped Children Act); multihandicapped hearing impaired students; accessibility; oral interpreting; and directions for future research. (CL)

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OVERSIGHT ON PROGRAMS FOR THE DEAF AND HEARING IMPAIRED, 1980

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HEARING

BEFORE THE

SUBCOMMITTEE ON THE HANDICAPPED

OF THE

COMMITTEE ON
LABOR AND HUMAN RESOURCES
UNITED STATES SENATE

NINETY-SIXTH CONGRESS

SECOND SESSION

ON

TO EXAMINE CURRENT PROBLEMS AND PROGRAMS OF THE DEAF AND HEARING IMPAIRED, AND TO EXPLORE FUTURE TECHNOLOGICAL DEVELOPMENTS DESIGNED TO HANDLE THEIR PROBLEMS

FEBRUARY 6, 1980

Printed for the use of the Committee on Labor and Human Resources

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OVERSIGHT ON PROGRAMS FOR THE DEAF AND HEARING IMPAIRED, 1980

WEDNESDAY, FEBRUARY 6, 1980

U.S. SENATE,
SUBCOMMITTEE ON THE HANDICAPPED,
COMMITTEE ON LABOR AND HUMAN RESOURCES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:42 a.m., in room 4232, Dirksen Senate Office Building, Senator Jennings Randolph (chairman of the subcommittee) presiding.

Present: Senators Randolph, Schweiker, and Stafford.

OPENING STATEMENT OF SENATOR RANDOLPH

Senator **RANDOLPH**. Good morning and welcome to the ninth hearing of the Subcommittee on the Handicapped in the 96th Congress. As we continue our oversight hearings, members have brought to the attention of the subcommittee certain specific issues. Today we are doing oversight on the impact on the hearing impaired of Public Law 94-142 and other laws for the handicapped.

Because of his deep interest in the hearing impaired, Senator Schweiker has worked diligently and personally to organize this oversight hearing. All of the members of this subcommittee are indeed grateful to Senator Schweiker for his active participation on our subcommittee, and we are particularly appreciative that he carries that interest into the Appropriations Committee where he serves as the ranking member of the Labor/Health, Education, and Welfare Subcommittee.

I regret, that because of other commitments, I will be unable to remain through the hearing. However, along with the other members of the subcommittee, I will review the record of this hearing.

Dick, if you will give a statement at this time.

OPENING STATEMENT OF SENATOR SCHWEIKER

Senator **SCHWEIKER**. Thank you. Mr. Chairman, first I want to commend you for your leadership in all areas that the Subcommittee on the Handicapped has jurisdiction over. I also thank you for calling this hearing today on behalf of the largest and most neglected group of disabled people in our Nation, the hearing-impaired.

The problems of the hearing-impaired have been of great interest to me in my work on the Senate Handicapped Subcommittee and as the ranking Republican on the Senate Labor-HEW Appropriations Subcommittee. I am pleased to be able to participate with you, Mr. Chairman, in a forum today that focuses exclusively on the hearing-impaired.

As many of you know, hearing-impaired individuals in the United States number over 16 million. Hearing problems are particularly acute for older Americans, many of whom are embarrassed by this common disability. Considering the scope of the problem, it is clear to me that the Government is not doing nearly enough in all areas. According to statistics provided by the National Institutes of Health, the loss of earning power due to hearing impairment is at least $15 billion a year. This figure does not take into account the unmeasurable human suffering and isolation that accompanies hearing loss.

Additionally, it is estimated by the Environmental Protection Agency that 20 million Americans work in jobs where they are exposed to daily noise that is permanently damaging to their hearing. What type of impact this exposure will have on the hearing of working people as they grow older is not yet known. As the number and percentage of older people in our society grows larger each year, the repercussions for society of hearing impairment will also grow. It is time the Government made a concerted, coordinated effort to deal with the disability of hearing impairment.

We need to do more in the area of screening infants and children. We need to improve our public school programs for the hearing-impaired. We need to increase our research efforts to understand and prevent hearing losses, and we need to improve the rehabilitative and information services available for hearing-impaired citizens.

I pledge my continued efforts on behalf of the hearing-impaired, and I know that I will be joined by Senator Randolph and Senator Stafford and the other members of the Handicapped Subcommittee in these efforts. I look forward to working with the many groups represented here today to improve the quality of life for the hearing-impaired.

Thank you, Mr. Chairman.

Senator **RANDOLPH**. Thank you, Senator Schweiker.

Now, Dr. Giannini, if you would come first.

STATEMENT OF MARGARET J. GIANNINI, M.D., DIRECTOR, NATIONAL INSTITUTE OF HANDICAPPED RESEARCH, DEPARTMENT OF EDUCATION

Dr. **GIANNINI**. Thank you. Mr. Chairman and members of the committee, I sincerely appreciated your invitation to appear before the subcommittee today to discuss those programs and activities of the National Institute of Handicapped Research which relate to the deaf and the hearing-impaired.

Now under the Department of Health, Education, and Welfare, but soon a part of the new Department of Education, the Institute was established under Public Law 95-602 to improve the effectiveness of services delivered to handicapped individuals by providing for a comprehensive and coordinated approach to all Federal research programs involving handicapped individuals from the preschool handicapped child to the working age adult handicapped person and to the elderly disabled.

The Institute is a centralized resource for information on the needs of the handicapped, a means of establishing research priorities, a flexible—responsive resource for understanding research being done in support of established priorities, as well as a means for disseminating technical knowledge and the results of research to those who can best be served by it and to the general public as well.

Our specific mission includes: Identifying and eliminating the causes of disability; maximizing the healthy physical and emotional status of handicapped persons, their functional ability, self-sufficiency, self-development, and personal autonomy; preventing or minimizing personal and family, physical, mental, social, educational, vocational and economic effects of disability; reducing and eliminating physical, social, educational, vocational and environmental barriers to permit access to services and assistance for handicapped individuals and to enable them to use their abilities in activities of daily life.

While much research is being done to assist handicapped individuals, efforts are generally fragmented. The Institute will try to organize, expand, and provide direction for research, development, and demonstrations in support of services for the handicapped. Our goals must be ambitious. We must find the best means for organizing our Nation's resources to relieve the burdens of disability in the shortest possible time. We must determine how the vast scientific and technological resources of this country can be applied more extensively and effectively, and we must introduce order and coordination into existing research efforts and assure maximum and more widely diffused benefits.

We will use our national/regional network of special centers and coordinate matching efforts with other Federal agencies under the guidance of the Interagency Committee on Handicapped Research and the National Council on the Handicapped.

As you know, the mandate of the Institute is extremely broad and deals with all handicaps and all age groups from very young children to the disabled elderly. Deafness affects this entire age spectrum. While working deaf people have been considered fairly well in research in the past, the very young and the aged have not fared as well.

Of the deaf population, estimated at 1.8 million, approximately 500,000 became deaf at the age of 19 or earlier; a substantial portion were born deaf or acquired the disability before they were able to establish language skills. Thousands of preschool children are deaf. On a given day, over 60,000 deaf children attend public or private residential and day schools. We do not even have an estimate of the numbers who are not enrolled in any formal school setting, but who are affected by hearing disabilities.

I would like to quote a report by Holm and Thompson in 1971 on the problems of deaf children. They stated:

> Children who are deaf or hard of hearing often are not referred for audiological evaluation as early as possible. As a consequence, medical, audiological and educational remediation may be delayed beyond the optimum time for prevention. Among hearing-impaired children, one of the most difficult to identify is the child with selective hearing loss. Selective hearing loss implies normal hearing for certain frequencies and a substantial loss for others. If the loss occurs at frequencies which

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are important for hearing speech, the deleterious effect on speech and language development may be substantial.

Much research needs to be done on the complex problems which face young children. Help in the early stages of life may significantly affect their promise for the future as well as ours.

The deaf population of working age may approach 400,000 individuals. Continuing research relating to their coping abilities in jobs, in the community, in the family, is essential. Near-term relevance of such study is highly significant to the deaf people and taxpayers of today.

Senator **Randolph**. I wonder if I may interrupt, without breaking your continuity, Dr. Giannini, to say that we have documentation that deaf individuals are able in many, many jobs, professions, and activities, to do work that is comparable and ofttimes even better than those who hear. That is a fact.

Dr. **Giannini**. It is a fact.

Senator **Randolph**. It is a fact also, and I mention it at this time, that applies equally to the blind.

Dr. **Giannini**. Oh, yes.

Senator **Randolph**. Blind persons occupy many positions of trust and leadership, and their achievements are of the same caliber or even better than of those who are sighted.

We must constantly work to do the job which is necessary to do—and of course, you will carry it forward to give that treatment, that training, that programing which will help the deaf and other handicapped people.

I commend handicapped people and we work for them and with them. My tribute at this point is to their productive strength in the American society.

Dr. **Giannini**. I think that is a very important point. Just as an aside, when I appeared before you a couple of weeks ago, one of the important concepts that we must overcome is to do something about attitudinal barriers, and I think that must be coordinated with whatever research, whatever service delivery models that we appropriately achieve for all handicapped.

The increasing number of deaf persons among the aging population is practically an unstudied phenomenon. Grave questions remain unanswered in areas relating to the elderly deaf person's living conditions, health, maintenance, public benefits, potential and recreational activities. While no current, precise population estimates of this group exist, it is reasonable to assume that thousands upon thousands of aging deaf people need the benefits arising out of relevant research on their particular circumstances.

The Institute intends to address these needs, to assess available and upcoming technology, and to seek through research improved service delivery systems which can aid the integration of these special age groups and others with hearing impairments fully into our society.

Begun under the Rehabilitation Services Administration, but now under the National Institute of Handicapped Research, 2 of the 21 research and training centers are designated specifically to deal with deafness. One, located at New York University, is in its 16th year. This center focuses primarily on the communication needs of deaf people. The New York University Center has produced a number of outstanding deaf and normally hearing professionals who are fully involved in training, as well as research and community roles. The second center is located at the University of California Medical School in San Francisco. In operation only a few years, it focuses on the mental health of deaf people. The Institute recognizes the priority of establishing additional centers on deafness in order to survey unmet needs of the deaf.

Our very short life as a governmental entity precludes my reporting any substantial research activity on behalf of deaf people. At this time, we are developing specific long-range plans that will set the tone for our future efforts. Our areas of consideration will run the gamut of life problems of deaf people and will use survey, experimental demonstration, evaluative and a combination of techniques. We intend over the years to mount studies on the relationships of deafness to: marriage and the family; the community; the place of employment; public services; education, including mainstreaming; health care; emotional stability; the environment; transportation; architectural design; spoken and written language interchange, as well as counseling, training, prostheses, vision correction, and consideration of many other related components necessary for wholesome activities of daily living.

A word on interpreter training: An important aspect in any discussion of the needs and situation of deaf individuals is interpreter training. The training of interpreters for the deaf has undergone tremendous growth over the past decade. From a very few local training efforts, the art has progressed through the establishment of a small group of federally funded programs, on to recognition and inclusion, in isolated junior college curriculums, and up to the present state of emerging degree-level training efforts. We are encouraged by Public Law 95-602, which expresses official congressional concern for and recognition of the critical role that interpreters play in the successful integration of deaf people into the fabric of our society.

Senator **Randolph**. Could I interrupt you again?

Dr. **Giannini**. Surely.

Senator **Randolph**. Pat Forsythe called Gallaudet College, and Karen Cook is here with us this morning to interpret. There are many in our audience who are deaf. As you were speaking on this subject, I thought it would be an appropriate time to thank Karen and Gallaudet, and to say to the deaf in the audience that we are very delighted that you are here.

I wonder if Karen would ask now if those of you who are deaf or have a hearing-impairment would raise your hands. Would you do that?

[Seven hands were raised.]

Senator **Randolph**. Not as many as I thought. Thank you, Karen.

Dr. **Giannini**. Until only a few years ago, the individuals serving as interpreters for deaf people were relatively untrained. They were children, teachers, friends or siblings of deaf people who acquired some degree of sign language skill in an informal manner. For the most part, they had little or no formal training in interpreting; they just did whatever they were capable of doing to facilitate communication between deaf people and others as best they could.

Training efforts, when they emerged, were largely limited to sign language instruction provided in an informal setting, such as churches, clubs, or continuing education classes.

From this humble beginning, more formal training efforts have grown over the past two decades. These largely successful and well-intentioned efforts, however, have been loosely coordinated. As a result, very little, if anything, exists in the way of service delivery models on many critical issues. Those that need to and can be addressed by the Institute's research and training centers include, among others: candidate selection criteria; success and failure factors; cognitive processing; physiological factors, such as lighting, position, rhythm, rate and motion factors, and eye fatigue.

Science and technology offer much for the deaf and the hearing impaired. The Institute's San Francisco Rehabilitation Engineering Center has recently hosted a workshop on considering new communication systems for persons with impaired hearing or speech.

Some considerations are: the need to develop new devices which will promote a more flexible use of teletypewriters based on the immense interest generated in home computers. Such devices should feature a microprocessor based on bidirectional conversion between any teletype equipment which is presently used or will be developed, and should present a visual display with the option of making hard copies, as well as inexpensive storage of material on tape cassettes. This technology now exists and can be modified to serve the special needs of the deaf.

Special long-distance rates for deaf users might yield to a technological solution. Time-sharing networks now exist which permit two terminals to converse interactively or to send electronic mail. The systems are based on the fact that typing is quite slow compared to high-speed date transmission, and therefore many users share the same line with corresponding reductions in cost.

An immediate need exists for a number of relatively simple devices which serve as alarms or signals. These include visual smoke detectors and siren and doorbell indicators. They are being developed.

A phonetic typewriter is a practical possibility. This device will receive spoken input from a microphone or telephone and will display the phonetic equivalent of the speech in realtime on a visual or typed display.

An improved clinical procedure for fitting hearing aids is under development. This promises greater diagnostic reliability and greater performance from a properly fitted aid. Related improvements in reliability, impact resistance and overall robustness of hearing aids and the development of a new generation of hearing aids using the latest in technology are of prime importance.

Lipreading aids which provide visual or tactile information about speech features, such as voicing, which cannot be perceived through lip-reading alone are needed. Also useful would be the ongoing investigation of the Tadoma method of deaf-blind communication.

In the long term, the development of fully automatic speech recognition systems providing a visual or printed output is theoretically possible. The advent of a relatively inexpensive compact system would provide access for the deaf person to the entire spectrum of communication options which are available to the hearing.

The technology and needs exist for: teletype devices, portable message instruments, visual information displays at airports and other public places, hazard warning devices, television information systems, educational information systems, such as signing books for the deaf, wider availability of captioned movies, instructional media for nonverbal deaf persons, interpreter training media and programs and public information systems such as "How to Communicate with the Deaf," are all likely targets for our attention.

The Institute is actively searching for a consortium of institutions which has the necessary components of engineering, medicine and related sciences to qualify as a rehabilitation engineering center for deafness. This effort has been underway for the past 2 years without success, but we are hopeful that the right combination of expertise will come together so that the most important work needed in this area can get the attention it so badly needs.

I have tried to outline where we might go and the challenges the future offers us. I would like now to capsulize for you some of the projects supported by the Institute on behalf of the deaf and hearing impaired.

One of our research and demonstration projects terminated on December 31. It dealt with vocational evaluation of severely handicapped deaf persons and was conducted at New York University. It originally attempted to develop work samples for the deaf. After a survey of many locations serving the deaf, it was determined that it would be best to concentrate on four commercially available systems and develop modifications and instructions which would make them useful for the deaf. The four systems are:

JEVS, so called because it was developed from the Jewish Evaluation and Vocational Service. This is a series of work samples using American sign language instruction which has been developed, pretested and tried out in two locations. This holds high promise.

Another method is Micro Tower, originally developed by the Institute for the Crippled and Disabled, ICD, as the Tower work sample system. This is now greatly shortened as the Micro-Tower. Instructions for hearing clients are usually given on audio tape. One location visited had tried video tape instructions. That particular effort was not successful, and efforts were turned to testing, with the cooperation of the ICD, specialized instructions for deaf clients. Two other sites were utilized to field test the revised instructions.

The Tower system: The longer, full Tower work sample was also tested in these same two field locations using American sign language instructions.

The VALPAR work sample: This is only being used at this time in one center serving the deaf. Results of this experience will be studied, standard forms developed for the deaf, and the sample will be field tested to develop norms.

Also, a manual on work samples for the deaf is to be developed based on our experience with these four systems.

One of our specifically mandated concerns lies with the Native Americans and their special needs. We are supporting the planning of a many-staged project which seeks to alleviate the effects of otitis media, the incidence of which is 10 times higher among Native Americans than in the general population. This disease leads to hearing impairment and social, educational, and vocational handicaps. Research efforts will seek to serve the unique multicultural, lingual rehabilitation needs of the neurosensory disabled Native Americans by investigating the reliability and validity of a number of therapeutic and rehabilitative approaches, by developing diagnostic tools geared to the population's cultural and linguistic patterns, and by including Native American professionals in rehabilitation efforts.

We have had approximately 25 research projects in speech and hearing in 8 countries abroad supported through our special foreign currency program, Public Law 480, during the past 10 years. Six projects continue to be active in Egypt, Tunisia, Poland, India, and Guinea. Two meaningful projects are currently being completed in Tunisia and Egypt. These truly multinational endeavors focus on the verbal tonal system developed in Yugoslavia under our special foreign currency program by Dr. Guberina. Models similar to those in Tunisia and Egypt and being used in the United States in Ohio, Pennsylvania, and Tennessee.

In India, there is a high incidence of stroke among the young population of 20 to 30 year olds. These stroke victims have included a large number left with aphasia. Our support has gone into research on both the causal relationships of this phenomenon and into rehabilitation efforts.

Our project in Guinea is one of the first projects approved by that country involving assistance from the U.S. Government. Our support, with special foreign currencies, has been to establish a comprehensive research, demonstration and training center for the hearing disabled of Guinea.

In Poland, we are working on a project for the rehabilitation of deaf young adults working in a vocational textile school.

The impact of one of our projects in Egypt may have significant meaning for the rest of the Arab world as well. This project concerns the development of a standard sign vocabulary with an aural-oral base, as compared to manual signing. The establishment of this standard and the use of the left hand, allowing the right hand for writing, should serve as a model for duplication in many other countries of the area.

I have tried today to present an overview of some of the aspects of the needs of deaf and hearing-impaired individuals. I hope also to have set the tone for the promising work that is ahead of us. You may be sure that the institute is concerned about the well-being of deaf individuals, and we are ready to do something positive to help their needs.

Thank you.

Senator **Randolph**. Thank you very, very much, Dr. Giannini. I had the advantage—and it was an advantage—of going through your testimony prior to your speaking this morning. I believe that I can best conserve the time by providing you with written questions that I have ready. Would that be agreeable?

Dr. **GIANNINI**. Fine.

Senator **RANDOLPH**. Thank you so much.

[The questions with responses follow:]

Responses of Margaret J. Giannini, M.D.,
to Questions asked by Senator Randolph

QUESTION NO. 1

What is the relationship between the RTC on deafness and the program to establish centers to train interpreters for the deaf?

ANSWER

The program to train interpreters for the deaf is to be coordinated and integrated into a network which may include the research and training centers on deafness. An RTC on deafness could well be designated to coordinate and manage the program network. The program itself will focus on various aspects of interpreter training such as: candidate selection criteria, success/failure factors, cognitive processing, psychological factors and refinement of interpreter skills. An RTC on deafness also could undertake the research on these factors and serve to evaluate the effectiveness of the total program.

QUESTION NO. 2

What are the research priorities of the Institute in the area of deafness?

ANSWER

Research priorities for NIHR will be determined by the long range plan, which will be submitted to Congress in May, 1980. We expect areas of research outlined in the plan to include: communication skills, development and refinement of assistive aids and devices, improvement of living conditions, health maintenance, recreational activities and the utilization of telecommunications systems.

QUESTION NO. 3

What plans do you have to disseminate information about deafness in accordance with 202 (b)(2) of the Rehabilitation Act?

ANSWER

Dissemination of information, including information on deafness, is a priority of the Institute under the new Act. Details and strategies to carry out this priority are being developed as a part of the NIHR long range plan.

QUESTION NO. 4

What deaf staff members are currently employed by the Institute?

ANSWER

None.

QUESTION NO. 5

How many consultants are presently employed by the Institute? For what length of time and amount of time are these persons employed and for what purpose? Are these persons under contract? What amount of funds is being spent for consultants?

ANSWER

At present, NIHR has employed one appointed consultant for a period not to exceed 90 days (beginning in December 1979) for $16, 380. The Institute has also let 6 consultant service contracts, ranging from 10 to 20 days, at a cost of $15,927. All of these consultants are helping with the design and development of the national long range plan.

Follow-up Questions for Hearing February 6, 1980, Provided to the
National Institute of Handicapped Research on April 30, 1980
Responded to on May 12, 1980

QUESTION NO. 1

You stated in your response to question #2 that the long-range plan mandated by Public Law 95-602 would be submitted to Congress in May of 1980. Do you still expect to submit this plan in May to the Congress and can you provide a definite date for submission?

ANSWER

I have by letter of April 28, 1980, to Senators Harrison A. Williams, Jr., and Jennings Randolph requested a 6-month extension for the official submission of the NIHR long-range plan. I submit for the record a copy of the April 28, 1980, correspondence.[1]

QUESTION NO. 2

With respect to question #5 regarding consultants, please provide the following information.

a. You state that NIHR has employed one appointed consultant for a period not to exceed 90 days (beginning in December 1979). What are the actual dates of employment and who is the individual appointed as consultant?

ANSWER

Seldon P. Todd, Jr., is the appointed consultant and he has worked December 20, 21, 22, 26, 27, 28, 29; January 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 21, 22, 23, 25, 28, 29, 31; February 1, 2, 3, 4, 5, 6, 13, 14, 15, 19, 21, 22, 23, 24, 29; March 1, 8, 15, 16, 22, 23, 24; April 5, 12, 13, 19--a total of 55 days. There are still 35 days for which he can be employed.

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[1] The letter may be found in the files of the Subcommittee.

b. You also state that NIHR had let 6 consultant service contracts, ranging from 10 to 20 days, at a cost of $15,926. Is each contract at $15,926? To whom have these contracts gone? What are the time lengths for each individual contract?

ANSWER

Contracts were issued to	Days	Amounts
Leonard Perlman	20	$3,326
Joseph LaRocca	15	3,326
Betty Jo Berland	15	4,112
Phyllis Blaunstein	10	1,668
William Langner	10	1,790
Leonard Green	10	1,705
		$15,927

Attachment

Senator **Randolph**. I am going to ask you, Senator Schweiker, to proceed with your questions and, at this time, take over the chair. You can work from this spot, or there, whatever you would like.

Thank you, Dr. Giannini.

[Whereupon, Senator Schweiker assumed the chair.]

Senator **Schweiker**. Thank you very much, Mr. Chairman.

Doctor, let me first point out—and you all may be aware of it—the microphone that you and I are using here is connected to an audio loop. You mentioned in your testimony that new technology would come to bear to help disabled people, and here is an example of new technology. Later, we are going to have a demonstration of how this audio loop system works. You may know how it works; I do not know.

My first question is, are you aware of the audio loop and its repercussions for the hard of hearing.

Dr. **Giannini**. I am not totally familiar with the technology of many of these systems at the moment, and I would not be comfortable in answering technical questions about it. However, I am aware of the loop. I know there are some problems with it, but I do not know quite what they are.

Senator **Schweiker**. Well, it is a relatively new technology, so being aware of it is important. The point I would like to make is that different technologies can help different kinds of people. We know the laser cane helps the blind very significantly. Signing, as we have here today, helps the totally deaf. This audio loop helps the hard of hearing or the hearing-impaired.

The point I would like to make is that we really have to look at different technologies to provide different kinds of help. I do not think there is any other single technology that can help as many people as this little gadget we have here this morning. There are at least 16 million hearing-impaired individuals and about 10 percent of them are deaf. Most deaf people would not get help from this device, but many who wear hearing aids can be helped substantially, their quality of listening improved, and they can be treated as normal in many respects just by using this little gadget.

One of the points I would like to make with the Government witnesses this morning is that the loop represents a tremendous technological breakthrough that we are really not using yet. It is relatively inexpensive. We are going to have a demonstration of it, and I hope you will take a look at the loop to see what might be done by your institute to encourage its use.

The other area of interest to me that you did mention is improving the quality of hearing aids. I am glad you mentioned that, because you spoke to my second point. As one who wears a hearing aid—and I am fortunate that I only have a moderate hearing loss, so I can wear a kind that other people who have a more severe loss cannot wear—I know that hearing aids leave an awful lot to be desired. There is really a lack of technological growth in hearing aid design, a lack of technological research on hearing aids that I think is unbelievable, considering there are 16 million people out there who can potentially wear them.

I would encourage you, as you said in your statement, to really pursue this subject. I have talked with Senator Percy, who also wears a hearing aid, and he feels just as strongly as I do that there is a tremendous inability—not inability, but just a gap here that nobody has pursued to improve hearing aids. Now, the audio loop is one significant exception to that, but the aid itself has really been underdeveloped with all the technology we have in other areas. So I hope you will pursue, as you said you would in your statement, the improved technology of hearing aids.

One of the problems is that we have in this field we have to serve people in different ways. I mentioned that signing helps the deaf; the audio loop would help the people who are not totally deaf, but can wear a hearing aid. I think we have to look at solutions to problems from the different perspectives of the different disabilities.

On the other hand, when we come to something like basic research, there we have a very common thing, and developments that could help both the hearing impaired and the deaf could come from the same research. I am working with the National Institutes of Health to beef up their research programs for both hearing impaired and deaf people. They have a very lousy program in terms of counseling, frankly, it is a very low-key program; and research has been underfunded for both deaf and hearing impaired. Now, that is not this committee's nor your responsibility, but I will address this question later.

In what ways are you going to coordinate whatever gets done in NIH's hearing impaired and deaf research program with what you are doing? That would be the National Institute of Neurological and Communicative Disorders and Stroke, of course.

Dr. **GIANNINI**. Hopefully, since we are very well mandated within the law that we will form a Federal interagency council, many of these questions at least will be aired. Hopefully, we will be able to have a reading on where the projects are being done, what agencies are doing what, where can we cooperatively build from certain projects, and that there will be a better stream of research activities and disseminating the information to all the agencies.

I think that that is going to be a very challenging experience for me, because I will have to chair that committee. But I am very optimistic. I think that since many people have the same questions from various agencies, who is doing what, that the sharing will be very much needed and very acceptable, so that we can have a talking point from thereon.

Senator **SCHWEIKER**. What is the Institute's budget request for fiscal year 1981?

Dr. **GIANNINI**. The budget is $37 million.

Senator **SCHWEIKER**. Do you have any rough idea of how much will be spent on deaf or hearing impaired, or have you not had that chance to break that down yet?

Dr. **GIANNINI**. Not at the moment. I have really only been pursuing this for about 10 days.

Senator **SCHWEIKER**. Well, I realize you are a totally new Institute, new program and new Director, so we are going to give you plenty of time to get oriented.

Thank you very much, doctor. We appreciate your being here. We wish you well in your new assignment. I think you are exceedingly well qualified for your work, and we are delighted that you have accepted that undertaking.

Dr. **GIANNINI**. Thank you very much, Senator.

[The prepared statement of Dr. Giannini follows:]

STATEMENT OF MARGARET J. GIANNINI, M.D.
BEFORE THE SUBCOMMITTEE ON THE HANDICAPPED OF THE SENATE COMMITTEE ON LABOR AND HUMAN RESOURCES

February 6, 1980

Programs and Activities on Behalf of the Deaf and Hard of Hearing

Mr. Chairman: I sincerely appreciated your invitation to appear before the Subcommittee today to discuss those programs and activities of the National Institute of Handicapped Research which relate to the deaf and hard of hearing.

Now under the Department of Health, Education and Welfare, but soon a part of the new Department of Education, the Institute was established under P.L. 95-602 to improve the effectiveness of services delivered to handicapped individuals by providing for a comprehensive and coordinated approach to all Federal research programs involving handicapped individuals from the preschool handicapped child to the working age adult handicapped person and to the elderly disabled.

The Institute is a centralized resource for information on the needs of the handicapped, a means of establishing research priorities, a flexible-responsive resource for understanding research being done in support of established priorities as well as a means for disseminating technical knowledge and the results of research to those who can best be served by it and to the general public as well.

Our specific mission includes:

1. Identifying and eliminating the causes of disability.

2. Maximizing the healthy physical and emotional status of handicapped persons, their functional ability, self-sufficiency, self-development and personal autonomy.

3. Preventing or minimizing personal and family, physical, mental, social, educational, vocational and economic effects of disability.

4. Reducing and eliminating physical, social, educational, vocational and environmental barriers to permit access to services and assistance for handicapped individuals and to enable them to use their abilities in activities of daily life.

While much research is being done to assist handicapped individuals, efforts are generally fragmented. The Institute will try to organize, expand and provide direction for research, development and demonstrations in support of services for the handicapped. Our goals must be ambitious. We must find the best means for organizing our Nation's resources to relieve the burdens of disability in the shortest possible time. We must determine how the vast scientific and technological resources of this country can be applied more extensively and effectively and we must introduce order and coordination into existing research efforts and assure maximum and more widely diffused benefits.

The Institute will seek new authorization of categorical research. We will use our national/regional network of special centers and coordinate matching efforts with other Federal agencies under the guidance of the Interagency Committee on Handicapped Research and the National Council on the Handicapped.

Hearing Impairment Impacts on All Age Groups

As you know, the mandate of the Institute is extremely broad and deals with all handicaps and all age groups from very young children to the disabled elderly. Deafness affects this entire age spectrum. While working age deaf people have been considered fairly well in research in the past, the very young and the aged have not fared as well.

Of the deaf population, estimated at 1.8 million, approximately 500,000 became deaf at age 19 or earlier; a substantial portion were born deaf or acquired the disability before they were able to establish language skill. Thousands of pre-school children are deaf. On a given day over 60,000 deaf children attend public or private residential and day schools. We do not even have an estimate of the numbers who are not enrolled in any formal school setting, but who are affected by hearing disabilities.

A report by Holm and Thompson (1971) on the problems of deaf children stated that:

> "Children who are deaf or hard of hearing often are not referred for audiological evaluation as early as possible. As a consequence, medical, audiological and educational remediation may be delayed beyond the optimum time for prevention. Among hearing-impaired children, one of the most difficult to identify is the child with selective hearing loss. Selective hearing loss implies normal hearing for certain frequencies and a substantial loss for others. If the loss occurs at frequencies which are important for hearing speech, the deleterious effect on speech and language development may be substantial."

Much research needs to be done on the complex problems which face young children. Help in the early stages of life may significantly affect their promise for the future as well as ours.

The deaf population of working age may approach 400,000 individuals. Continuing research relating to their coping abilities in jobs, in the community, in the family is essential. Near term relevance of such study is highly significant to the deaf people and taxpayers of today.

The increasing number of deaf persons among the aging population is practically an unstudied phenomenon. Grave questions remain unanswered in areas relating to the elderly deaf person's living conditions, health, maintenance, public benefits, potential and recreational activities. While no current precise population estimates of this group exist, it is reasonable to assume that thousands upon thousands of aging deaf people need the benefits arising out of relevant research on their particular circumstances. The Institute intends to address these needs, to assess available and upcoming technology and to seek through research improved service delivery systems which can aid the integration of these special age groups and others with hearing impairments fully into our society.

Programs of the Research and Training Centers

Begun under the Rehabilitation Services Administration, but now under the National Institute of Handicapped Research, two of the twenty-one Research and Training Centers are designated specifically to deal with deafness. One, located at New York University, is in its sixteenth year. This center focuses primarily on the communication needs of deaf people. The New York University Center has produced a number of outstanding deaf and normally hearing professionals who are fully involved in training, research, and community roles. The second center is located at the

University of California Medical School in San Francisco. In operation only a few years, it focuses on the mental health of deaf people. The Institute recognizes the priority of the establishing additional centers on deafness in order to survey unmet needs of the deaf.

Our very short life as a Governmental entity precludes my reporting any substantial research activity on behalf of deaf people. At this time we are developing specific long range plans that will set the tone for our future efforts. Our areas of consideration will run the gamut of life problems of deaf people, and will use survey, experimental demonstration, evaluative and combination of techniques. We intend over the years to mount studies on the relationships of deafness to marriage and the family, the community, the place of employment, public services, education (including mainstreaming), health care, emotional stability, the environment, transportation, architectural design, spoken and written language interchange, as well as counselling, training, prostheses, vision correction and consideration and many other related components necessary for wholesome activities of daily living.

Interpreter Training

An important aspect in any discussion of the needs and situation of deaf individuals is interpreter training. The training of interpreters for the deaf has undergone tremendous growth over the past decade. From a very few local training efforts,the art has progressed through the establishment of a small group of Federally-funded programs on to recognition and inclusion in isolated junior college curricula and up to the present state of emerging degree level training efforts. We are encouraged by the promise inherent in Section 304 (d) of P.L. 95-602 which expresses official Congressional concern for and recognition of the critical role that interpreters play in the successful integration of deaf people into the fabric of of our society.

Until only a few years ago the individuals serving as interpreters for deaf people were relatively untrained. They were children, teachers, friends or siblings of deaf people who acquired some degree of sign language skill in an informal manner. For the most part, they had little or no formal training in interpreting. They just did whatever they were capable of doing to facilitate communication between deaf people and others as best they could.

Training efforts, when they emerged, were largely limited to sign language instruction provided in an informal setting, such as churches, clubs, or continuing education classes.

From this humble beginning, more formal training efforts have grown over the past two decades. These largely successful and well-intentioned efforts, however, have been loosely coordinated. As a result, very little if anything exists in the way of service delivery models on many critical issues. Those that need to and can be addressed by the Institute's Research and Training Centers include among others: candidate selection criteria, success/failure factors, cognitive processing, physiological factors such as lighting, position, rhythm, rate and motion factors/ eye fatigue.

The Promise of Science and Technology

Science and technology offer much for the deaf and hearing impaired. The Institute's San Francisco Rehabilitation Engineering Center has recently hosted a workshop on considering new communication systems for persons with impaired hearing or speech.

Some considerations are:

-- The need to develop new devices which will promote a more flexible use of teletypewriters based on the immense interest generated in home computers. Such devices should feature a microprocessor based on bi-directional conversion between any teletype equipment which is presently used or will be developed and should present a visual display with the option of making hard copies, as well as inexpensive storage of material on tape cassettes. This technology now exists and can be modified to serve the special needs of the deaf.

-- Special long -distance rates for deaf users might yield to a technological solution. Time-sharing networks now exist which permit two terminals to converse interactively, or to send electronic mail. The systems are based on the fact that typing is quite slow, compared to high-speed data transmission, and therefore many users "share" the same line with corresponsing reductions in cost.

-- An immediate need exists for a number of relatively simple devices which serve as alarms or signals. These include visual smoke detectors and siren and doorbell indicators. These are being developed.

-- A phonetic typewriter is a practical possibility. This device will receive spoken input from a microphone or telephone, and will display the phonetic equivalent of the speech in real-time on a visual or typed display.

-- An improved clinical procedure for fitting hearing aids is under development. This promises greater diagnostic reliability and greater performance from a properly fitted aid. Related improvements in reliability, impact-resistance and overall "robustness" of hearing aids and the development of a new generation of hearing aids using the latest in technology are of prime importance.

-- Lip-reading aids which provide visual or tactile information about speech features, such as voicing, which cannot be perceived through lip-reading alone are needed. Also useful would be the ongoing investigation of the Tadoma method of deaf-blind communication.

In the long term the development of fully automatic speech recognition systems providing a visual or printed output is theoretically possible. The advent of a relatively inexpensive, compact system would provide access for the deaf person to the entire spectrum of communication options which are available to the hearing.

The technology and needs exist for: teletype devices, portable message instruments, visual information displays at airports and other public places, hazard warning devices, television information systems, educational information systems such as signing books for the deaf, wider availability of captioned movies, instructional media for non-verbal deaf persons, interpreter training media and programs and public information systems such as "How to Communicate with the Deaf" are all likely targets for our attention.

The Institute is actively searching for a consortium of institutions which has the necessary components of engineering, medicine and related sciences to qualify as a Rehabilitation Engineering Center for Deafness. This effort has been underway for the past two years without success, but we are hopeful that the right combination of expertise will come together so that the most important work needed in this area can get the attention it so badly needs.

Particular NIHR Programs for the Deaf

I have tried to outline where we might go and the challenges the future offers us, I would like now to capsulize for you some of the projects supported by the Institute on behalf of the deaf and hearing impaired.

One of our Research and Demonstration projects terminated on December 31. It dealt with vocational evaluation of severely handicapped deaf persons and was conducted at New York University. It originally attempted to develop work samples for the deaf. After a survey of many locations serving the deaf, it was determined that it would be best to concentrate on four commercially - available systems and develop modifications and instructions which would make them useful for the deaf. The four systems are:

JEVS (so called because it developed from the Jewish Evaluation and Vocational Service.) This is a series of work samples using American Sign Language instruction which has been developed, pre-tested and tried out in two locations. This holds high promise.

Micro Tower (originally developed by the institute for the Crippled and Disabled (ICD) as the Tower work sample system). This is now greatly shortened as the Micro-Tower. Instructions for hearing clients are usually given on audio tape. One location visited had tried video tape instructions. That particular effort was not successful and efforts were turned to testing with the cooperation of the ICD specialized instructions for deaf clients. Two other sites were utilized to field test the revised instructions.

Tower- the longer, full Tower work sample was also tested in these same two field locations using American Sign Language Instructions.

VALPAR work sample - This is only being used at this time in one center serving the deaf. Results of this experience will be studied, standard forms developed for the deaf and the sample will be field tested to develop norms.

Also, a manual on work samples for the deaf is to be developed based on our experience with these four systems.

One of our specifically mandated concerns lies with the Native Americans and their special needs. We are supporting the planning of a many-stage project which seeks to alleviate the effects of otitis media, the incidence of which is ten times higher among Native Americans than in the general population. This disease leads to hearing impairment and social, educational and vocational handicaps. Research efforts will seek to serve the unique multi-cultural lingual rehabilitation needs of the neuro-sensory disabled Native Americans by investigating the reliability and validity of a number of therapeutic and rehabilitative approaches, by developing diagnostic tools geared to the population's cultural and linguistic patterns and by including Native American professionals in rehabilitation efforts.

We have had approximately 25 research projects in speech and hearing in eight countries abroad supported through our special foreign currency program (P.L. 480) during the past ten years. Six projects continue to be active in Egypt, Tunisia, Poland, India and Guinea.

Two meaningful projects are currently being completed in Tunisia and Egypt. These truly multinational endeavors focus on the Verbal Tonal System developed in Yugoslavia under our special foreign currency program by Dr. Guberina. Models similar to those in Tunisia and Egypt are being used in the United States in Ohio, Pennsylvania and Tennessee.

In India there is a high incidence of stroke among the young population of 20 to 30 year olds. These stroke victims have included a large number left with aphasia. Our support has gone into research on both the causal relationships of this phenomenon and into rehabilitation efforts.

Our project in Guinea is one of the first projects approved by that country involving assistance from the US Government. Our support, with special foreign currencies, has been to establish a comprehensive research, demonstration and training center for the hearing disabled of Guinea.

In Poland we are working on a project for the rehabilitation of deaf young adults working in a vocational textile school.

The impact of one of our projects in Egypt may have significant meaning for the rest of the Arab world as well. This project concerns the development of a standard sign vocabulary with an aural-oral base (as compared to manual signing). The establishment of this standard and the use of the left hand, allowing the right hand for writing, should serve as a model for duplication in many other countries of the area.

I have tried today to present an overview of some of the aspects of the needs of deaf and hearing impaired individuals. I hope also to have set the tone for the promising work that is ahead of us. You may be sure that the Institute is concerned about the well-being of deaf individuals and we are ready to do something positive to help their needs. Thank you.

Senator **Schweiker**. Our next witness will be Mr. Robert Humphreys, Commissioner of the Rehabilitation Services Administration. Bob, we are glad to have you back; this is your home ground here, so we are delighted to see you again.

I would request—to make this work, you do have to have the loop microphone a little closer to you, so that our hard-of-hearing friends will hear your voice clearly. We probably should have a little bit higher mike, because it sits low. But if you keep it up close to your mouth, our friends will be able to hear us. So go ahead.

STATEMENT OF ROBERT R. HUMPHREYS, COMMISSIONER, REHABILITATION SERVICES ADMINISTRATION, DEPARTMENT OF EDUCATION

Mr. **Humphreys**. Thank you, Senator Schweiker and members of the committee. I appreciate very much the opportunity of being with you this morning. In the knowledge that the committee has a very full agenda and a number of witnesses to hear who will present to the committee very important testimony, I will endeavor to summarize my statement and then be available for such questions as you may want to ask.

I would like to provide a relatively comprehensive overview of the programs currently in progress within the Rehabilitation Services Administration relating to both deaf people and people with hearing impairments, and I want to indicate how we are implementing the new authorities of the Rehabilitation, Comprehensive Services and Developmental Disabilities Amendments of 1978.

Most recent data show that in 1978, just about 7,000 deaf people were rehabilitated through the State vocational rehabilitation system. That represents about 2½ percent of the total rehabilitants during that year, and in the same year, about 10,000 people with hearing impairments, those who are not totally deaf, were rehabilitated, and that accounts for another 3½ percent. Additionally, 1,000 persons have been served through special demonstration projects for both deaf and hard-of-hearing people. The total numbers served but not rehabilitated are about 50,000. And I might point out, too, that in terms of multiple disabilities, additional persons are served beyond those numbers where there are disabilities in addition to deafness or hearing impairment or where that is a secondary disability.

These numbers and percentages have remained relatively constant for a number of years. However, a number of constructive steps are being taken to increase State agency capacity to deal with the deaf and hard-of-hearing population. As a result, we estimate that during the period 1979 through 1981, State programs will rehabilitate somewhat greater numbers, and all States now have hired or are actively recruiting staff who are trained as professional counselors and are also able to communicate by sign language with deaf clients. That has been, as you know, one of the major stumbling blocks to greater rehabilitation within the State vocational rehabilitation agencies. Deaf clients are very hard to rehabilitate, are very long in their rehabilitation, and it takes some specialized training and specialized services which, up until recently, State agencies for the most part have not had adequate capacity to deal with.

We have, together with the Council of State Administrators for Vocational Rehabilitation, engaged in a number of ways to improve services to deaf and hard-of-hearing people. We are working also to secure more referrals of deaf and hearing-impaired people who need vocational rehabilitation services. A new arrangement with the National Hearing Aid Society and collaboration with voluntary and professional organizations should produce additional rehabilitants under the rehabilitation program.

Some of the specific areas of interest which are provided for deaf and hard-of-hearing individuals, I would like to relate to you now. In the area of special projects for severely disabled individuals, this, as you will recall, is a project grant authority that specifically is targeted to severely disabled people whose rehabilitation is difficult. One of those categories is deaf individuals who have not reached their maximum vocational potential. In 1980, we estimate that there will be four projects under that special project authority for deaf persons. Over the past 6 years, RSA has funded 12 projects which have served about 1,000 deaf individuals. These projects, as I indicated, are very special and provide intensive and comprehensive services to individuals who are difficult to rehabilitate.

We have also changed the level of support, in terms of the length, to 5 years from 3, pursuant to the 1978 amendments, so that we are now able to provide more extended service to severely disabled deaf and hard-of-hearing individuals. Experience has shown that severely handicapped deaf people often need more than 3 years to achieve the capacity for competitive or other employment.

The provision of comprehensive rehabilitation services for a number of deaf people whose maximum vocational potential has not been reached continues to be one of our major concerns. We estimate the population in that category to be about 100,000, and they are often severely limited in personal, social, and vocational adjustment.

The establishment of the National Technical Institute for the Deaf was a very important step toward reducing the underemployment of deaf people. That institute is developing vital new concepts in training for deaf people and is opening employment opportunities in many industries heretofore closed. And I might point out that State vocational rehabilitation agencies are directly involved with every student of the Institute.

Significant progress is being made in vocational training for deaf people at existing community facilities. Demonstration programs in several areas successfully integrated deaf students into existing programs using support services such as interpreting, notetaking, tutoring and counseling. New and better employment opportunities are opening to deaf people as they complete their training. This program has stimulated a number of other colleges to develop programs for this purpose, and approximately 50 community colleges currently are sponsoring vocational training programs for deaf people modeled on the success of those three demonstration programs. These are jointly funded with our soon-to-be sister agency, the Bureau of Education for the Handicapped, and serve as vitally needed training resources for deaf clients of vocational rehabilitation agencies.

The communicative skills program, a long-term training project funded by RSA and now in its 11th year, continues to increase the number of rehabilitation personnel, professionals in allied fields, employers and coworkers of deaf people who are able to communicate in sign language. Over 60 universities now offer credit courses in manual communication due, in large part, to the greater awareness and interest created by the Communicative Skills Program.

The Registry of Interpreters for the Deaf, RID, formerly a RSA project, is expanding and accelerating its certification program to meet the critical needs of State rehabilitation agencies for an adequate supply of certified interpreters. The interpreter training consortium, another long-term training grant program, involves six regional training programs.

Sixteen States have developed or currently are developing mental health programs for deaf people. New York was a pioneer through the New York Psychiatric Institute, and provides a model for those developing programs. Additional States are expected to provide these services as more mental health workers able to communicate with deaf people become available.

I would like to mention also special efforts that are being made under the developmental disabilities program for people who are deaf or hearing-impaired and also developmentally disabled. A project of national significance was awarded to the University of Arizona in 1976 for about a million and a quarter dollars, and the purpose was to demonstrate model services and training for staff serving hearing-impaired, developmentally disabled persons. The project has been rather extensive; it has trained 3,000 professional personnel and practitioners throughout that southwest region.

Another major activity for maximizing employment opportunities for deaf and hard of hearing people is underway in Seattle through a projects-with-industry grant, another one of our project grant authorities, with the Seattle Speech and Hearing Center. More than 100 placements have been made at over 25 corporations in the Seattle area. A retention rate of over 75 percent for those individuals in that program attests to the permanency of these well-paying jobs for deaf people, and it also attests to the tenacity and capability of people who are deaf to hold down significant and meaningful employment.

Twenty-five innovation and expansion grant projects funded in 1979 provided rehabiliation services to clients who were deaf or hearing-impaired. You will be interested to know also that this year the Institute on Rehabilitation Issues, an activity that is coordinated by the Rehabilitation Services Administration and the National Institute, is producing a manual on the subject of "Interpreter Services for the Deaf—Guidelines for Rehabilitation Personnel," in line with the increased activity on the part of the State rehabilitation agencies to add to their interpreter work force and to increase the capacity of counselors to work with deaf and hearing-impaired individuals.

The year 1980 is the centennial celebration of the date of birth of Helen Keller. The Rehabilitation Services Administration has a contractual agreement with the Industrial Home for the Blind to operate the Helen Keller National Center. In 1979, 583 deaf-blind individuals received services at the center's national headquarters or through one of its eight regional representatives. These services are wide and varied, and are tailored specifically to the individual needs of the deaf-blind individuals in that program. The center coordinates these activities with the activities of BEH-funded regional centers where appropriate.

There is no reference to age or disability in the new independent living authority in the 1978 amendments. That activity is well underway, as you know, and we are pleased to have been able to move forward in developing Centers for Independent Living. These projects provide within their respective communities a locus around which a variety of services required by severely handicapped people can be organized, coordinated and provided. The centers do not propose to provide, under one roof, all services needed by persons with all disabilities. These services will be tied in with other existing programs, services such as housing referral and assistance, transportation, advocacy, peer counseling, personal care attendants.

The Independent Living program, in my view, holds great promise for the unknown thousands of dependent deaf people who have had very little, if any, formal training. They may consequently be without communication skills beyond the family circle. They are seriously deficient in being able to meet the demands of daily living, such as time management, transportation, financial management, human interrelationships, personal hygiene and other basic activities. Quite frequently, they have little or no employment experience.

I want to point out to the committee that we are implementing the centers program with special sensitivity to the communication needs of deaf and hearing-impaired persons. Reviewers of applications submitted for funding in fiscal 1979, the first year of the centers' operation, invariably noted the presence or absence of such basic tools or services as TTY links and availability of interpreters. The need for these elements was called to the attention of the successful applicants who had not mentioned them in the original applications. The announcement of the availability of grants for fiscal year 1980 is even more specific. It now states:

> To be considered, all applications serving the full range of disabilities must state that the program will be operated from facilities which are free of architectural and communication barriers, or that barriers will be eliminated in very short order following the award of any grant. This includes assuring availability of interpreters for the deaf and telecommunications devices, as well as minor structural modifications to premises to be occupied, as needed.

This year's announcement states, as a special consideration for funding, that:

> Special consideration will be given to project applications which propose to serve all disabilities, including individuals whose disability may limit access to knowledge of the availability of services, such as the mentally retarded and the sensory-impaired, the multiply-impaired and those which will provide outreach to severely handicapped individuals.

The emphasis on programming to serve all disabilities has been reached after careful consideration and consultation with many people. We do have in the program announcement a proposal to authorize specific provisions to blind and the visually handicapped individuals, and the reason for this is that 27 States have a designated State unit which serves only blind and visually handicapped people. Even with that, these States that have those dual roles are encouraged to develop a center program which will address the common needs of all handicapped people. Stating that the Rehabilitation Services Administration will fund up to 10 single disability projects—in this case, projects to agencies serving only blind individuals—is not an endorsement by the Rehabilitation Services Administration of the single disability approach, but is a recognition of some very real strictures and constraints existing at the State level. Those blind agencies, I need not point out, are authorized to serve only blind individuals; they are specific agencies in designated State units under the Independent Living authorities of title VII, and therefore are eligible potentially to provide services under title VII in the Independent Living Centers program under part B.

Our commitment to the comprehensive-type center includes safeguards for deaf persons needing independent living training. I have already mentioned interpreters and telecommunication devices. Inservice training in sign language and in the psychology of deafness for many selected centers are very much in our plans.

For a number of years under its ongoing training program, RSA has supported projects for training interpreters for the deaf. Interpreters trained under our projects were expected to have special skills in working with deaf clients of State VR agencies and in assisting deaf persons in achieving their vocational rehabilitation objectives.

The new section 304(d) program for interpreter training is generic and does not reflect any specific reference to vocational rehabilitation. Interpreters trained under this program will be available to assist deaf individuals in their dealings with health, education, social services, vocational rehabilitation, recreation, employment, and any other program that deaf individuals may encounter.

The provision of section 304(d) requires that the program be administered under the Office of Information and Resources for the Handicapped. Since that office has not been established, the Rehabilitation Services Administration, in order to insure prompt issuance of grant awards this year, has established mechanisms to initiate the program in 1980. I anticipate that a notice will be published in the Federal Register announcing competition for the $900,000 that was made available under a special earmark in the 1980 continuing resolution by the Congress. Although the program is being initiated by RSA, it is not being administered as a part of our ongoing Rehabilitation Services Administration training program. It is a separate and distinct training authority, and its final organizational assignment must be determined by the new Department of Education. Staff from the Office of Handicapped Individuals are working closely with the Rehabilitation Services Administration to insure that the broad scope of the program is realized.

I think it is important to take a few moments to give special attention to the issue of auxiliary aids related to section 504 and the civil rights requirements in postsecondary institutions. Colleges and universities are looking to rehabilitation funding for payment of classroom interpreters for deaf students and staff. State agencies maintain that the colleges must provide those services. They interpret this civil rights requirement as a similar benefit, and therefore feel that the requirement is, under the law, that they look to the colleges and State institutions to pay for those expenses rather than the vocational rehabilitation dollar. State agencies also philosophically believe that colleges should make their instruction accessible without being conditioned upon the support by direct service programs. State VR agencies do accept responsibility for the costs of personal aids which are unique to the individual students.

About a year and a half ago, I issued an interim policy statement which allowed the continuation of payment by rehabilitation agencies for classroom interpreters serving their own clients. This was in order to allow for an orderly transition while the colleges developed means of putting into effect their own requirements for auxiliary services to their deaf students. We are in the process of discussing this issue with the Office of Civil Rights, and it is an issue which will be raised and has been brought to the attention of the Department for a final resolution. I hope that can take place very soon.

I am looking forward to the opportunity for the Rehabilitation Services Administration, in the new Department of Education, to construct a long-range plan for providing the needed educational and rehabilitation and other services to deaf, hard of hearing and communicatively impaired individuals. The Bureau of Education for the Handicapped and RSA have a long and fruitful record, I believe, of cooperative projects and activities, and it goes without saying that we will be cooperating very carefully, very well with the new National Institute of Handicapped Research, particularly on these issues relating to deafness and hard of hearing.

Recently, I received a task force report from a special group of 15 individuals who are, many of them, related to deaf organizations and themselves are deaf. Their task was to review the functions and the work of the Deafness and Communicative Disorders Office. That process, over the last year or so, has now been completed; they have submitted their report to me, and I am studying their recommendations to consider how they can be put forward as an integral part of the overall administrative budget and legislative plans which will be developed for handicapped persons in the new department. I must say that after an initial review of that report I am extremely impressed with the care and the thoughtfulness and the professionalism of the members of that committee and the care that has been taken by them in bringing together that report, and I wanted to commend those individuals publicly.

Mr. Chairman, that is all I have. I have taken longer than I expected to, and I am sorry for that, but I felt that it was important to do what I could to share with the committee those efforts that we have underway.

Senator **Schweiker**. Thank you, Commissioner. Do you have an idea, offhand, of how many different Federal agencies or departments deal with the deaf and the hearing impaired?

Mr. **Humphreys**. In terms of specific attention to the needs of the deaf and hearing-impaired individual as a disability, I do not. I know that there are some 300 programs that affect disabled individuals throughout the Federal Government.

We had, as you know, and you participated in it, I believe, the White Conference on Handicapped Individuals. It dealt with the issues surrounding the need for a national policy on disability and for giving attention to a number of disability areas, including people with communication impairments.

Senator **Schweiker**. Is there a mechanism to coordinate these different programs, either under you or under Dr. Giannini, with her new office? How do you see that problem being attacked?

Mr. **Humphreys**. There are several ways to approach that. One of those that we have under development now is that within the new Department of Health and Human Services, Secretary Harris has authorized the establishment of a working committee on disability, which will serve as a catalyst for identifying policy issues within that department, and ultimately will serve, I believe, as the mechanism under section 510 of the Department of Education Organization Act for coordinating and providing liaison to disability programs within the new Department of Education.

The Department of Education, I would anticipate, will have some similar mechanism for coordinating its disability programs and relating also to the Department of Health and Human Services.

Beyond that, I do very much believe that we need to have a national policy on disability that will identify specific mechanisms for insuring that excessive duplication, overlap and conflict does not exist among the programs that serve deaf and hearing-impaired individuals, as well as other disabled persons.

Senator **Schweiker**. Section 504 of the Rehabilitation Act promises building accessibility for all disabled people. Now, in the broadest sense, what has been done to enforce 504 for the hearing-impaired, for example? In other words, how many Federal agencies would have audio loop rooms in which meetings could be held and the hearing-impaired really have access to what is going on?

Mr. **Humphreys**. My suspicion would be, Senator, that very little has been done in terms of incorporating the audio loop into the plans of Federal agencies. As you suggested, it is new technology, and I am most happy to be made aware of it and I will make certain that other agencies are aware of it as well.

The responsibility, as you know, for enforcement under section 504 rests primarily with the Office of Civil Rights as the lead agency. Each of the other Federal agencies and departments have responsibilities to issue regulations that are consistent with the HEW regulations on section 504.

Senator **Schweiker**. They will get a letter tomorrow.

Mr. **Humphreys**. All right.

Senator **Schweiker**. We are going to get them tuned in on it. That is a good point about enforcement, so we will get them tuned in tomorrow with a letter.

How much of the RSA's budget goes for programs to help the deaf and hearing-impaired?

Mr. **Humphreys**. I indicated that I do not have a total dollar figure. I can certainly provide that for the record.

Senator **Schweiker**. Right, and would you also break it down between the deaf and the hearing-impaired in subcategories as well?

Mr. **Humphreys**. I will attempt to do that, although I do not know that I can make those specific distinctions. I will try it.

Senator **Schweiker**. I think that may be part of our problem right there.

Mr. **Humphreys**. Yes.

[The information referred to follows:]

Rehabilitation Services Administration

Federal Expenditures for Deaf and Hearing Impaired Persons

Basic Support Program - Title I

	FY 76	FY 77	FY 78
Deaf	$16,100,000	$19,050,000	$20,400,000
Hearing Impaired	15,400,000	19,050,000	18,100,000
		Trust Funds	
Deaf	$ 1,730,000	$ 2,500,000	$ 3,675,000
Hearing Impaired	575,000	535,000	484,000
		SSI Funds	
Deaf	$ 2,267,000	$ 2,860,000	$ 3,687,000
Hearing Impaired	527,000	436,000	358,000

Senator Schweiker. You note that in 1979, there were 25 innovation and expansion grant projects funded that provided rehabilitation services for deaf and hearing-impaired individuals. As you know, the 1981 budget phases out funding for this program. How do we plan to continue serving these individuals?

I realize you do not set the budget, and I realize the budget is not something that you have a final say in, but I am still asking the question.

Mr. Humphreys. Yes, sir. The budget policy related to the incorporation of the innovation and expansion grant program into the section 110 basic State grant program permits the continuation of those innovative activities under the aegis of the basic State grant program.

I would certainly want to encourage States to continue to engage in innovative techniques in the spirit of the innovation and expansion grant program, in conjunction with their regular direct service delivery under the basic State grants.

Senator Schweiker. Well, thank you very much, Commissioner; we appreciate your participation. We hope you will focus on some of the new questions and new ideas that we have raised this morning. That is really the purpose of the hearing, anyway, and we appreciate your participation.

Mr. Humphreys. Mr. Chairman, I will very carefully read the proceedings of this hearing, and will certainly in our policy review discuss those proceedings and comments that have been made by the witnesses here and the members of the committee.

I appreciate the opportunity to testify.

Senator Schweiker. Thank you.

[The prepared statement of Commissioner Humphrey follows:]

STATEMENT OF ROBERT R. HUMPHREYS
BEFORE THE SENATE SUBCOMMITTEE ON THE HANDICAPPED
ON PROGRAMS AND ACTIVITIES IN BEHALF
OF DEAF AND HEARING IMPAIRED INDIVIDUALS

FEBRUARY 6, 1980

MR. CHAIRMAN, I APPRECIATE THE OPPORTUNITY TO APPEAR BEFORE YOU AND THE MEMBERS OF THE SUBCOMMITTEE TODAY TO DISCUSS SOME OF THE PROGRAMS AND ACTIVITIES UNDERTAKEN BY THE REHABILITATION SERVICES ADMINISTRATION TO HELP MEET THE NEEDS OF HANDICAPPED PEOPLE WHO ARE DEAF OR HAVE IMPAIRED HEARING, AND TO DESCRIBE HOW WE ARE MOVING WITHIN AVAILABLE RESOURCES TO BUILD THE INFRASTRUCTURE TO BETTER SERVE MORE OF THIS POPULATION. MY STATEMENT IS INTENDED TO PROVIDE A BRIEF OVERVIEW OF PROGRAMS CURRENTLY UNDERWAY IN BEHALF OF THESE TWO GROUPS. I SHALL REPORT, ALSO, ON HOW WE ARE IMPLEMENTING NEW AUTHORITIES IN THE REHABILITATION, COMPREHENSIVE SERVICES AND DEVELOPMENTAL DISABILITIES AMENDMENTS OF 1978--AUTHORITIES WHICH ARE UNIQUELY DESIGNED TO IMPROVE SERVICES TO PEOPLE WITH COMMUNICATIVE DISORDERS.

SERVICES FROM STATE AGENCY PROGRAMS

OUR MOST RECENT DATA SHOW THAT IN 1978, 6,877 DEAF PEOPLE WERE REHABILITATED BY THE STATE VOCATIONAL REHABILITATION

AGENCIES. THEY REPRESENTED 2.4% OF THE TOTAL OF 294,396 INDIVIDUALS REHABILITATED. DURING THE SAME YEAR AN ADDITIONAL 9,982 PERSONS WITH OTHER HEARING IMPAIRMENTS WERE REHABILITATED. THEY ACCOUNTED FOR ANOTHER 3.4% OF THOSE REHABILITATED. AN ADDITIONAL 1,000 PERSONS HAVE BEEN SERVED THROUGH SPECIAL DEMONSTRATION PROJECTS FOR THESE GROUPS. THE OVERALL NUMBERS SERVED BUT NOT REHABILITATED ARE ESTIMATED TO BE 50,000.

THESE NUMBERS AND PERCENTAGES HAVE REMAINED SUBSTANTIALLY LEVEL FOR THE PAST SEVERAL YEARS. HOWEVER, A NUMBER OF CONSTRUCTIVE STEPS ARE BEING TAKEN TO IMPROVE STATE AGENCY CAPABILITY. AS A RESULT, WE ESTIMATE THAT IN 1979 THROUGH 1981 THE STATE PROGRAMS WILL REHABILITATE SOMEWHAT GREATER NUMBERS. ALL STATES NOW HAVE HIRED OR ARE ACTIVELY RECRUITING STAFF WHO ARE TRAINED AS PROFESSIONAL COUNSELORS AND ARE ALSO ABLE TO COMMUNICATE BY SIGN LANGUAGE WITH DEAF CLIENTS. A MODEL STATE PLAN FOR VOCATIONAL REHABILITATION OF DEAF CLIENTS, DEVELOPED IN 1973 AND REVISED IN 1977, SERVES AS A GUIDE TO STATE AGENCIES ON MANPOWER DEVELOPMENT AND TOTAL PROGRAM DEVELOPMENT FOR DEAF AND HEARING IMPAIRED PEOPLE.

WE ARE WORKING, ALSO, TO SECURE MORE REFERRALS OF DEAF AND HEARING IMPAIRED PEOPLE WHO NEED VOCATIONAL REHABILITATION SERVICES. WE HOPE THAT A NEW ARRANGEMENT WITH THE NATIONAL HEARING AID SOCIETY AND COLLABORATION WITH VOLUNTARY AND PROFESSIONAL ORGANIZATIONS WILL PRODUCE SUBSTANTIALLY INCREASED REFERRALS OF INDIVIDUALS WHO CAN BENEFIT FROM

REHABILITATION SERVICES.

I WOULD NOW LIKE TO DESCRIBE SOME OF OUR SPECIFIC PROGRAMS.

SPECIAL SERVICE PROJECTS

UNDER SECTION 311(A)(1) OF THE 1978 AMENDMENTS THE REHABILITATION SERVICES ADMINISTRATION IS MAKING GRANTS FOR SPECIAL PROJECTS FOR SEVERELY DISABLED INDIVIDUALS, INCLUDING THE DEAF. THESE PROJECTS ARE DESIGNED TO PROVIDE SERVICES TO THOSE WHO HAVE BEEN UNDERSERVED IN THE PAST. IN 1980 WE ESTIMATE THERE WILL BE FOUR SUCH PROJECTS FOR DEAF PERSONS. UNDER SIMILAR AUTHORITIES IN THE PAST SIX YEARS WE HAVE FUNDED 12 PROJECTS WHICH HAVE SERVED ABOUT ONE THOUSAND INDIVIDUALS. THESE PROJECTS SERVE SEVERELY HANDICAPPED DEAF PERSONS WHO HAVE BEEN UNABLE TO ENTER OR ~~PROGRESS IN REGULAR~~ REHABILITATION OR OTHER SERVICE PROGRAMS.

WE HAVE CHANGED THE ALLOWABLE PERIOD OF FEDERAL SUPPORT FROM THREE TO FIVE YEARS. EXPERIENCE HAS SHOWN THAT SEVERELY HANDICAPPED DEAF PEOPLE OFTEN NEED MORE THAN THREE YEARS TO ACHIEVE THE CAPACITY FOR COMPETITIVE OR OTHER EMPLOYMENT. RECRUITMENT OF HIGHLY SPECIALIZED STAFF TO WORK WITH THESE CLIENTS SHOULD BE EASIER WITH THE PROBABILITY OF FIVE YEARS OF FUNDING.

INCREASING THE VOCATIONAL AND INDEPENDENT LIVING POTENTIAL OF DEAF AND HEARING IMPAIRED INDIVIDUALS

THE PROVISION OF COMPREHENSIVE REHABILITATION SERVICES FOR A SIGNIFICANT NUMBER OF DEAF PEOPLE WHOSE MAXIMUM VOCATIONAL POTENTIAL HAS NOT BEEN REACHED CONTINUES TO BE ONE OF OUR

MAJOR CONCERNS. ESTIMATED AT 100,000 IN NUMBER, SUCH DEAF PEOPLE ARE OFTEN SEVERELY LIMITED IN PERSONAL, SOCIAL AND VOCATIONAL ADJUSTMENT. THEIR PROBLEMS CLUSTER AROUND EDUCATIONAL AND SOCIAL UNDERACHIEVEMENT, SEVERELY LIMITED COMMUNICATION SKILLS, AND PROBLEMS IN ADJUSTMENT TO THE BASIC REQUIREMENTS OF DAILY LIVING. SOME HAVE SECONDARY PHYSICAL DISABILITIES.

THE ESTABLISHMENT OF THE NATIONAL TECHNICAL INSTITUTE FOR THE DEAF AUTHORIZED BY PUBLIC LAW 89-36 IN 1968 WAS A VERY IMPORTANT STEP TOWARD REDUCING THE UNDEREMPLOYMENT OF DEAF PEOPLE. THE INSTITUTE IS DEVELOPING VITAL NEW CONCEPTS IN TRAINING FOR DEAF PEOPLE AND IS OPENING EMPLOYMENT OPPORTUNITIES IN MANY INDUSTRIES HERETOFORE CLOSED. STATE VOCATIONAL REHABILITATION AGENCIES ARE DIRECTLY INVOLVED WITH EVERY STUDENT OF THE INSTITUTE.

SIGNIFICANT PROGRESS IS BEING MADE IN VOCATIONAL TRAINING FOR DEAF PEOPLE AT EXISTING COMMUNITY FACILITIES. DEMONSTRATION PROGRAMS AT DELGADO COLLEGE, AT SEATTLE COMMUNITY COLLEGE, AND AT THE ST. PAUL TECHNICAL-VOCATIONAL INSTITUTE SUCCESSFULLY INTEGRATED DEAF STUDENTS INTO EXISTING PROGRAMS USING SUPPORT SERVICES SUCH AS INTERPRETING, NOTETAKING, TUTORING AND COUNSELING. NEW AND BETTER EMPLOYMENT OPPORTUNITIES OPENED TO DEAF PEOPLE AS THEY COMPLETED THEIR TRAINING. THE PROGRAMS DID MUCH TO STIMULATE INTEREST AT OTHER SCHOOLS IN PROVIDING VOCATIONAL

TRAINING TO DEAF INDIVIDUALS. CURRENTLY, APPROXIMATELY FIFTY COMMUNITY COLLEGES ARE SPONSORING VOCATIONAL TRAINING PROGRAMS FOR DEAF PEOPLE MODELED ON THE SUCCESS OF THE THREE DEMONSTRATION PROGRAMS. THESE PROGRAMS ARE JOINTLY FUNDED WITH THE BUREAU OF EDUCATION FOR THE HANDICAPPED AND SERVE AS VITALLY NEEDED TRAINING RESOURCES FOR DEAF CLIENTS OF STATE VOCATIONAL REHABILITATION AGENCIES.

A SMALL BUT IMPORTANT BEGINNING WAS MADE IN 1974 IN PROVIDING SERVICES TO DEAF PEOPLE WHO HAVE NOT ACHIEVED THEIR MAXIMUM VOCATIONAL POTENTIAL. THREE SPECIAL PROJECTS FUNDED BY RSA WERE ESTABLISHED IN INDIANA, WASHINGTON STATE, AND SOUTH CAROLINA TO PROVIDE COMPREHENSIVE REHABILITATION SERVICES TO SEVERELY HANDICAPPED DEAF PEOPLE FOR WHOM NO PROGRAMS PREVIOUSLY EXISTED. ONE ADDITIONAL PROJECT WAS BEGUN IN 1975 IN CALIFORNIA AND ONE EACH IN TEXAS AND MARYLAND IN 1976. IN 1977, PROJECTS WERE PUT INTO OPERATION IN VIRGINIA, DELAWARE, AND FLORIDA.

THE COMMUNICATIVE SKILLS PROGRAM, A LONG-TERM TRAINING PROJECT FUNDED BY RSA AND NOW IN ITS ELEVENTH YEAR, CONTINUES TO INCREASE THE NUMBER OF REHABILITATION PERSONNEL, PROFESSIONALS IN ALLIED FIELDS, EMPLOYERS AND CO-WORKERS OF DEAF PEOPLE WHO ARE ABLE TO COMMUNICATE IN SIGN LANGUAGE. OVER SIXTY UNIVERSITIES NOW OFFER CREDIT COURSES IN MANUAL COMMUNICATION DUE, IN LARGE PART, TO THE GREATER AWARENESS AND INTEREST GENERATED BY THE COMMUNICATIVE SKILLS PROGRAM.

THE REGISTRY OF INTERPRETERS FOR THE DEAF, A FORMER REHABILITATION SERVICES ADMINISTRATION PROJECT, IS EXPANDING AND ACCELERATING ITS CERTIFICATION PROGRAM TO MEET THE CRITICAL NEED OF STATE VOCATIONAL REHABILITATION AGENCIES FOR AN ADEQUATE SUPPLY OF CERTIFIED INTERPRETERS TO WORK WITH COUNSELORS SERVING DEAF PEOPLE. THE NATIONAL INTERPRETER TRAINING CONSORTIUM, A LONG-TERM TRAINING GRANT PROGRAM FUNDED IN FISCAL YEAR 1974 BY THE REHABILITATION SERVICES ADMINISTRATION, INVOLVES SIX REGIONAL TRAINING PROGRAMS. IT IS EXPEDITING THE DEVELOPMENT OF CERTIFIED INTERPRETERS NEEDED BY STATE VOCATIONAL REHABILITATION AGENCIES.

SIXTEEN STATES HAVE DEVELOPED OR ARE CURRENTLY DEVELOPING MENTAL HEALTH PROGRAMS FOR DEAF PEOPLE. NEW YORK, WHICH ABSORBED THE PIONEERING REHABILITATION SERVICES ADMINISTRATION-SUPPORTED DEMONSTRATION MENTAL HEALTH PROJECT FOR THE DEAF AT THE NEW YORK PSYCHIATRIC INSTITUTE, PROVIDES A MODEL FOR THE DEVELOPING PROGRAMS. ADDITIONAL STATES ARE EXPECTED TO PROVIDE THESE MUCH NEEDED SERVICES AS MORE MENTAL HEALTH WORKERS ABLE TO COMMUNICATE WITH DEAF PEOPLE BECOME AVAILABLE.

I WISH TO MENTION, ALSO, THE SPECIAL EFFORTS MADE IN BEHALF OF HEARING IMPAIRED INDIVIDUALS WHO ARE ALSO DEVELOPMENTALLY DISABLED. UNDER P.L. 94-103, THE DEVELOPMENTAL DISABILITIES OFFICE AWARDED A PROJECT OF NATIONAL SIGNIFICANCE TO THE UNIVERSITY OF ARIZONA REHABILITATION CENTER, TUCSON. THE FUNDING LEVEL FOR THIS THREE-YEAR EFFORT WAS $1,250,000 FOR THE PERIOD OCTOBER 1, 1976 THROUGH SEPTEMBER 30, 1979. THE

PURPOSE OF THIS PROJECT WAS TO DEMONSTRATE MODEL SERVICES AND TRAINING FOR STAFF SERVING HEARING IMPAIRED DEVELOPMENTALLY DISABLED (HIDD) PERSONS. AGENCIES AND ORGANIZATIONS THROUGHOUT ARIZONA WITH OUTREACH INTO NEIGHBORING STATES WORKED TO EXTEND COMPREHENSIVE SERVICES TO 368 PERSONS IN REMOTE, RURAL AREAS. THE PROJECT ALSO HAS TRAINED 3,000 PROFESSIONAL PERSONNEL AND PRACTITIONERS THROUGHOUT THE REGION. WE ANTICIPATE THAT THIS PROJECT WILL ENCOURAGE REPLICATION NATIONALLY IN A VARIETY OF FACILITIES.

ANOTHER MAJOR INITIATIVE FOR MAXIMIZING EMPLOYMENT OPPORTUNITIES FOR DEAF AND HARD OF HEARING PEOPLE IS UNDERWAY IN SEATTLE, WASHINGTON, THROUGH A PROJECTS WITH INDUSTRY GRANT TO THE SEATTLE SPEECH AND HEARING CENTER AUTHORIZED BY SECTION 621 OF THE REHABILITATION ACT. UNDER THIS SUCCESSFUL PARTNERSHIP PROGRAM BETWEEN THE PRIVATE SECTOR AND THE REHABILITATION COMMUNITY, MORE THAN 100 PLACEMENTS HAVE BEEN MADE AT OVER 25 COPRORATIONS IN THE SEATTLE AREA, INCLUDING BOEING, WEYERHAUSER AND LEAR JET. THE JOBS INCLUDE DRAFTSMEN, MACHINISTS, MACHINE OPERATORS, FOOD SERVICE WORKERS, CLERICAL, AND OTHERS. A RETENTION RATE OF OVER 75% ATTESTS TO THE PERMANANCY OF THESE WELL PAYING JOBS FOR DEAF PEOPLE.

IN ADDITION, TWENTY-FIVE (25) INNOVATION AND EXPANSION GRANT PROJECTS FUNDED IN FY 79 PROVIDED REHABILITATION SERVICES FOR CLIENTS WHO WERE DEAF OR HEARING IMPAIRED. YOU WILL BE INTERESTED TO KNOW, ALSO, THAT THIS YEAR THE INSTITUTE ON REHABILITATION ISSUES, AN ACTIVITY COORDINATED BY THE REHABILITATION SERVICES

ADMINISTRATION IN COOPERATION WITH THE NATIONAL INSTITUTE OF HANDICAPPED RESEARCH, IS PRODUCING A MANUAL ON THE SUBJECT OF "INTERPRETER SERVICES FOR THE DEAF--GUIDELINES FOR REHABILITATION PERSONNEL." THE STUDY GROUP THAT IS PREPARING THIS MATERIAL WILL MAKE A REPORT TO A NATIONAL SEMINAR IN JUNE 1980. THE MATERIAL WILL THEN BE PUBLISHED AND WIDELY DISTRIBUTED.

SPECIAL SERVICES FOR DEAF-BLIND PEOPLE - HELEN KELLER NATIONAL CENTER FOR DEAF-BLIND YOUTHS AND ADULTS

BECAUSE 1980 IS THE CENTENNIAL CELEBRATION OF THE BIRTH DATE OF HELEN KELLER, IT SEEMS ESPECIALLY APPROPRIATE TO COMMENT ON CURRENT REHABILITATION PROGRAMS FOR DEAF-BLIND INDIVIDUALS. IN ORDER TO ENSURE PROVISION OF COMPREHENSIVE REHABILITATION SERVICES FOR DEAF-BLIND PERSONS, THE REHABILITATION SERVICES ADMINISTRATION HAS A CONTRACTUAL AGREEMENT WITH THE INDUSTRIAL HOME FOR THE BLIND TO OPERATE THE HELEN KELLER NATIONAL CENTER FOR DEAF-BLIND YOUTHS AND ADULTS, LOCATED AT SANDS POINT, NEW YORK. THE NATIONAL CENTER WAS ESTABLISHED BY CONGRESS TO PROVIDE COMPREHENSIVE EVALUATION AND TRAINING SERVICES TO DEAF-BLIND INDIVIDUALS IN ORDER TO INSURE THAT THESE PERSONS MAY REACH THEIR MAXIMUM POTENTIAL TO LIVE AND WORK INDEPENDENTLY.

IN FISCAL YEAR 1979, 583 DEAF-BLIND INDIVIDUALS RECEIVED SERVICES AT THE CENTER'S NATIONAL HEADQUARTERS OR THROUGH ONE OF ITS EIGHT REGIONAL REPRESENTATIVES. COMMUNICATION, TRAVEL, ACTIVITIES of daily living, and vocational skills are examples of training provided these clients. In addition to rehabilitation services, the National Center also provides training for professionals, carries out public education programs, conducts field testing and evaluation of communication devices and other sensory aids for deaf-blind persons, and participates in the collection and analysis of National data regarding this population. The Center coordinates these activities with the activities of BEH-funded regional centers where appropriate.

Independent Living for the Deaf and Hearing Impaired

There is no reference to age or disability in the new independent living authorities provided by the 1978 amendments other than that contained in Part C for older blind individuals. The thrust of this new program is that of comprehensive services. To date, funding for the new independent living authority has been limited to Part B Centers for Independent Living. From the FY 1979 appropriation of $2 million, ten Centers grants were awarded. The Continuing Resolution for FY 1980 has made available $15 million, specifically targeted to Part B projects. Of this amount, $2 million will be held in reserve for continuations. Up to 65 new projects will be funded from the $13 million remaining. We are pleased that we have been able to move forward in developing Centers for Independent Living, for these projects provide within their respective communities a locus around which a wide variety of services required by severely handicapped individuals can be organized, coordinated, AND PROVIDED. THE CENTERS DO NOT PROPOSE TO PROVIDE, UNDER ONE ROOF, ALL SERVICES NEEDED BY PERSONS WITH ALL DISABILITIES. CENTER SERVICES WILL SUPPLEMENT AND BE INTEGRATED WITH EXISTING PROGRAMS. SERVICES SUCH AS HOUSING REFERRAL AND ASSISTANCE, TRANSPORTATION, ADVOCACY, PERSONAL CARE ATTENDANTS, PEER COUNSELING, AND INFORMATION AND REFERRAL ARE EXPECTED TO BE CORE SERVICES. WHEN SPECIALIZED SKILLS OR SERVICES ARE NECESSARY, THE CENTER WOULD LOOK TO SPECIALIZED AGENCIES. CAPABILITY BUILDING WILL BE FOCUSED ON UNMET NEEDS.

I CONTRAST THE CENTER OPERATION AND ITS COMBINATION OF SERVICES WITH THE PART A FORMULA AUTHORITY IN THAT UNDER THE FORMULA PROGRAM, SPECIFIC SERVICES CAN BE AUTHORIZED FOR SINGLE INDIVIDUALS, AND THAT, FURTHER, UNDER THE MANDATORY SUBGRANTING OF FUNDS, SPECIFIC SKILLS TRAINING PROGRAMS CAN BE SUPPORTED. THE INDEPENDENT LIVING PROGRAM HOLDS GREAT PROMISE FOR THE UNKNOWN THOUSANDS OF DEPENDENT DEAF PEOPLE WHO HAVE HAD VERY LITTLE OR NO FORMAL TRAINING. THEY MAY CONSEQUENTLY BE WITHOUT COMMUNICATION SKILLS BEYOND THE FAMILY CIRCLE. THEY ARE SERIOUSLY DEFICIENT IN MEETING THE DEMANDS OF DAILY LIVING SUCH AS TIME MANAGEMENT, TRANSPORTATION, FINANCIAL MANAGEMENT, HUMAN INTERRELATIONSHIPS, PERSONAL HYGIENE, AND OTHER BASIC ACTIVITIES. THEY HAVE LITTLE OR NO EMPLOYMENT EXPERIENCE.

I WANT TO POINT OUT THAT WE ARE IMPLEMENTING THE CENTERS PROGRAM WITH SENSITIVITY TO THE COMMUNICATION NEEDS OF DEAF AND HEARING IMPAIRED INDIVIDUALS. REVIEWERS OF APPLICATIONS SUBMITTED FOR FUNDING IN FY 1979 INVARIABLY NOTED THE PRESENCE OR ABSENCE OF SUCH BASIC TOOLS OF SERVICES AS TTY LINKS AND AVAILABILITY OF INTERPRETERS. THE NEED FOR THESE ELEMENTS WAS CALLED TO THE ATTENTION OF THE SUCCESSFUL APPLICANTS WHO HAD NOT MENTIONED THEM IN THE ORIGINAL APPLICATIONS. THE ANNOUNCEMENT OF THE AVAILABILITY OF GRANTS FOR FY 1980 IS EVEN MORE SPECIFIC. IT NOW STATES "TO BE CONSIDERED, ALL APPLICATIONS SERVING THE FULL RANGE OF DISABILITIES MUST STATE THAT THE PROGRAM WILL BE OPERATED FROM FACILITIES WHICH ARE FREE OF ARCHITECTURAL AND COMMUNICATION BARRIERS, OR THAT BARRIERS WILL BE ELIMINATED IN VERY SHORT ORDER FOLLOWING AWARD OF ANY GRANT. THIS INCLUDES ASSURING AVAILABILITY OF INTERPRETERS FOR THE DEAF AND TELECOMMUNICATIONS DEVICES, AS WELL AS MINOR STRUCTURAL MODIFICATIONS TO PREMISES TO BE OCCUPIED, AS NEEDED."

THIS YEAR'S ANNOUNCEMENT STATES, AS A SPECIAL CONSIDERATION FOR FUNDING, THAT "SPECIAL CONSIDERATION WILL BE GIVEN TO PROJECT APPLICATIONS WHICH PROPOSE TO SERVE ALL DISABILITIES, INCLUDING INDIVIDUALS WHOSE DISABILITY MAY LIMIT ACCESS TO KNOWLEDGE OF THE AVAILABILITY OF SERVICES, SUCH AS THE MENTALLY RETARDED AND THE SENSORY IMPAIRED, THE MULTIPLY IMPAIRED AND THOSE WHICH WILL PROVIDE OUTREACH TO SEVERELY HANDICAPPED INDIVIDUALS."

THE EMPHASIS ON PROGRAMMING TO SERVE ALL DISABILITIES WAS REACHED AFTER CAREFUL CONSIDERATION AND CONSULTATION WITH MANY PEOPLE. I FEEL THAT WE HAVE ACHIEVED A GENERAL AGREEMENT THAT THE COMPREHENSIVE APPROACH IS TO BE PREFERRED. OUR ANNOUNCEMENT DOES NOTE, HOWEVER, THAT APPROXIMATELY 27 STATES HAVE A DESIGNATED STATE UNIT WHICH SERVES ONLY BLIND AND VISUALLY HANDICAPPED INDIVIDUALS, AND ANOTHER DESIGNATED STATE UNIT WHICH SERVES ALL OTHER DISABILITIES. EVEN SO, THESE STATES ARE ENCOURAGED TO DEVELOP A CENTER'S PROGRAM WHICH WILL ADDRESS THE COMMON NEEDS OF ALL HANDICAPPED INDIVIDUALS TO THE EXTENT THAT SUCH JOINT PROGRAMMING IS PERMITTED BY STATE LAW AND OTHER STRUCTURAL CONSTRAINTS. OUR ANNOUNCEMENT ACKNOWLEDGES THAT BECAUSE OF THIS TRADITIONAL DELINEATION OF RESPONSIBILITIES, AS DETERMINED BY THE RESPECTIVE STATES, THE REHABILITATION SERVICES ADMINISTRATION MAY FUND UP TO TEN APPLICATIONS SUBMITTED SOLELY BY STATE REHABILITATION AGENCIES SERVING BLIND AND VISUALLY HANDICAPPED INDIVIDUALS.

STATING THAT THE REHABILITATION SERVICES ADMINISTRATION MAY FUND UP TO 10 SINGLE DISABILITY PROJECTS (IN THIS CASE, PROJECTS TO AGENCIES SERVING ONLY BLIND INDIVIDUALS) IS NOT AN ENDORSEMENT BY THE REHABILITATION SERVICES ADMINISTRATION OF THE SINGLE DISABILITY APPROACH, BUT IS A RECOGNITION OF SOME VERY REAL STRUCTURES AND CONSTRAINTS EXISTING ON THE STATE LEVEL.

I HASTEN TO EMPHASIZE THAT OUR COMMITMENT TO THE COMPREHENSIVE TYPE CENTER INCLUDES SAFEGUARDS FOR DEAF PERSONS NEEDING INDEPENDENT LIVING TRAINING. I HAVE ALREADY MENTIONED INTERPRETERS AND TELECOMMUNICATION DEVICES. IN-SERVICE TRAINING IN SIGN LANGUAGE AND IN THE PSYCHOLOGY OF DEAFNESS FOR MANY SELECTED CENTERS ARE VERY MUCH IN OUR PLANS.

TRAINING OF INTERPRETERS FOR THE DEAF

FOR A NUMBER OF YEARS UNDER ITS ONGOING TRAINING PROGRAM THE REHABILITATION SERVICES ADMINISTRATION HAS SUPPORTED PROJECTS FOR TRAINING INTERPRETERS FOR THE DEAF. INTERPRETERS TRAINED UNDER OUR PROJECTS WERE EXPECTED TO HAVE SPECIAL SKILLS IN WORKING WITH DEAF CLIENTS OF STATE VOCATIONAL REHABILITATION AGENCIES AND IN ASSISTING DEAF PERSONS IN ACHIEVING THEIR VOCATIONAL REHABILITATION OBJECTIVES.

THE NEWLY AUTHORIZED PROGRAM FOR INTERPRETER TRAINING UNDER SECTION 304(D) IS MORE GENERIC IN NATURE AND DOES NOT REFLECT ANY SPECIAL REFERENCE TO VOCATIONAL REHABILITATION. INTERPRETERS TRAINED UNDER THE NEW PROGRAM WILL BE AVAILABLE TO ASSIST DEAF INDIVIDUALS IN THEIR DEALINGS WITH HEALTH, EDUCATION, SOCIAL SERVICES, VOCATIONAL REHABILITATION, RECREATION, EMPLOYMENT AND SIMILAR PROGRAMS WHICH ARE IMPORTANT TO DEAF PEOPLE.

SECTION 304(D) PROVIDES THAT THE NEW PROGRAM BE ADMINISTERED THROUGH THE OFFICE OF INFORMATION AND RESOURCES FOR THE HANDICAPPED. SINCE THAT OFFICE HAS NOT BEEN ESTABLISHED, THE REHABILITATION SERVICES ADMINISTRATION, IN ORDER TO ENSURE PROMPT ISSUANCE OF GRANT AWARDS THIS YEAR, HAS ESTABLISHED MECHANISMS TO INITIATE THE PROGRAM IN 1980. A NOTICE WILL SOON BE PUBLISHED IN THE FEDERAL REGISTER ANNOUNCING COMPETITION FOR THE $900,000 AVAILABLE THIS YEAR. ALTHOUGH THE PROGRAM IS BEING INITIATED BY THE REHABILITATION SERVICES ADMINISTRATION, IT IS NOT BEING ADMINISTERED AS A PART OF THE REHABILITATION SERVICES ADMINISTRATION TRAINING PROGRAM. IT IS CONSIDERED A SEPARATE AND DISTINCT TRAINING AUTHORITY AND ITS FINAL ORGANIZATIONAL ASSIGNMENT MUST BE DETERMINED BY THE NEW DEPARTMENT OF EDUCATION. STAFF FROM THE OFFICE OF HANDICAPPED INDIVIDUALS ARE WORKING CLOSELY WITH REHABILITATION SERVICES ADMINISTRATION TO ENSURE THAT THE BROAD SCOPE OF THE PROGRAM IS REALIZED.

AUXILIARY AIDS FOR DEAF STUDENTS IN COLLEGES

COLLEGES AND UNIVERSITIES ARE LOOKING TO VOCATIONAL REHABILITATION FUNDING FOR PAYMENT FOR CLASSROOM INTERPRETERS FOR DEAF STUDENTS AND STAFF. STATE VOCATIONAL REHABILITATION AGENCIES MAINTAIN THAT COLLEGES MUST PROVIDE NECESSARY AUXILIARY EDUCATIONAL AIDS UNDER SECTION 504. THEY INTERPRET THIS CIVIL RIGHTS REQUIREMENT AS A "SIMILAR BENEFIT," AND THEREFORE FEEL LEGALLY BOUND TO LOOK TO THE COLLEGES RATHER THAN PAY WITH VOCATIONAL REHABILITATION DOLLARS WHAT THEY SEE AS AN EDUCATIONAL EXPENSE. STATE AGENCIES ARE ALSO PHILOSOPHICALLY

OPPOSED TO MAKING SUCH PAYMENTS. THEY BELIEVE THAT COLLEGES SHOULD MAKE THEIR INSTRUCTION ACCESSIBLE WITHOUT BEING CONDITIONED UPON FINANCIAL SUPPORT FROM SERVICE PROGRAMS. STATE VOCATIONAL REHABILITATION AGENCIES, HOWEVER, DO ACCEPT RESPONSIBILITY FOR COSTS OF PERSONAL AIDS WHICH ARE UNIQUE TO THE INDIVIDUAL STUDENT.

IN ORDER TO MINIMIZE DISRUPTION IN THE REHABILITATION PROGRAMS OF STATE VOCATIONAL REHABILITATION CLIENTS, THE REHABILITATION SERVICES ADMINISTRATION ISSUED AN INTERIM POLICY STATEMENT ALLOWING THE CONTINUATION OF PAYMENT BY VOCATIONAL REHABILITATION FOR CLASSROOM INTERPRETERS SERVING STATE CLIENTS. THIS WAS TO ALLOW FOR AN ORDERLY PHASE OUT WHILE COLLEGES DEVELOPED ALTERNATIVE MEANS AND PROCEDURES. STATE AGENCIES ARE REQUESTING AN END TO THIS INTERIM POLICY, PUTTING FULL RESPONSIBILITY ON THE COLLEGES. CONCURRENTLY, THE COLLEGES, AND THE OFFICE OF CIVIL RIGHTS OF THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE ARE REQUESTING THAT WE LIBERALIZE THE POLICY SO THAT STATE VOCATIONAL REHABILITATION AGENCIES CAN COVER BOTH TYPES OF COSTS.

THE EXPECTATION OF COLLEGES WAS INITIATED BY A STATEMENT IN THE APPENDIX OF THE DEPARTMENT'S SECTION 504 REGULATIONS TO THE EFFECT THAT COLLEGES MAY LOOK TO CHARITIES AND VOCATIONAL REHABILITATION TO COVER MOST OF THE COSTS. THE REHABILITATION SERVICES ADMINISTRATION AND THE OFFICE OF CIVIL RIGHTS HAVE RAISED THE ISSUE TO THE DEPARTMENTAL LEVEL FOR DISCUSSION AND RESOLUTION.

I AM LOOKING FORWARD TO THE OPPORTUNITY WHICH THE REHABILITATION SERVICES ADMINISTRATION WILL HAVE IN THE NEW DEPARTMENT OF EDUCATION TO CONSTRUCT A LONG RANGE PLAN FOR IMPROVING EDUCATIONAL AND REHABILITATION PROGRAMS FOR PEOPLE WHO HAVE COMMUNICATIVE DISORDERS. AS STATED EARLIER, THE REHABILITATION SERVICES ADMINISTRATION AND THE BUREAU OF EDUCATION FOR THE HANDICAPPED HAVE AN EXCELLENT RECORD OF COOPERATIVE ACTIVITIES ON BEHALF OF THEIR RESPECTIVE CLIENT POPULATIONS.

RECENTLY I HAVE RECEIVED A TASK FORCE REPORT FROM A SPECIAL GROUP OF FIFTEEN INDIVIDUALS EXPERIENCED IN THE PLANNING AND PROVISION OF SERVICES TO THIS UNDERSERVED GROUP OF HANDICAPPED INDIVIDUALS. THEY REVIEWED THE WORK OF OUR OFFICE OF DEAFNESS AND COMMUNICATIVE DISORDERS AND MADE CERTAIN ADMINISTRATIVE RECOMMENDATIONS TO FACILITATE THE WORK OF THIS SMALL UNIT. THEY ALSO SET FORTH A LONG RANGE DEVELOPMENT PROGRAM OF ADMINISTRATIVE ACTIVITIES THAT SHOULD BE UNDERTAKEN TO IMPROVE LINKAGES BETWEEN EXISTING SERVICES. I AM NOW STUDYING THESE RECOMMENDATIONS AND CONSIDERING HOW THEY CAN BE PUT FORWARD AS AN INTEGRAL PART OF OVERALL ADMINISTRATIVE, BUDGET AND LEGISLATIVE PLANS WHICH WILL BE DEVELOPED FOR HANDICAPPED INDIVIDUALS WITHIN THE NEW DEPARTMENT.

THANK YOU FOR THIS OPPORTUNITY TO PRESENT THIS REPORT OF OUR STEWARDSHIP TO THE SUBCOMMITTEE. I SHALL BE GLAD TO ANSWER QUESTIONS YOU MAY HAVE.

Senator **Schweiker**. Our next witness is Dr. Murray Goldstein, Deputy Director, National Institute of Neurological and Communicative Disorders and Stroke from the NIH, accompanied by Dr. Elkins, Audiologist.

We will take a 2-minute break before we hear from Dr. Goldstein.

[Whereupon, a brief recess was taken.]

Senator **Schweiker**. We will reconvene the hearing. I want to thank our signer for doing such a stalwart and perservering job. I apologize for her long period of service, because we normally do give a break sooner, but we have another signer now who will take over so we can proceed. Again I do want to thank our signer for all her yeoman work in this area.

Doctor, if you would proceed.

STATEMENT OF MURRAY GOLDSTEIN, M.D., DEPUTY DIRECTOR, NATIONAL INSTITUTE OF NEUROLOGICAL AND COMMUNICATIVE DISORDERS AND STROKE, NATIONAL INSTITUTES OF HEALTH, DEPARTMENT OF HEALTH AND HUMAN SERVICES, ACCOMPANIED BY EARLEEN ELKINS, AUDIOLOGIST, NATIONAL INSTITUTES OF HEALTH

Dr. **Goldstein**. Mr. Chairman, I am grateful for the opportunity of appearing before this subcommittee to discuss the problems and status of research on hearing loss and deafness.

Dr. Donald Tower, Director of the National Institute of Neurological and Communicative Disorders and Stroke has asked me to transmit his sincere regrets for not being able to be present today. He is testifying this morning before the Senate Committee on Appropriations on the Institute's budget for fiscal year 1981.

With your permission, I will present a brief summary of the thrust of our program's efforts.

Senator **Schweiker**. Go right ahead.

Dr. **Goldstein**. The NINCDS is acutely aware that hearing loss and deafness are among the most common and the most insidiously devastating afflictions of modern man. Approximately 10 percent of our population, or over 20 million individuals in the United States, have been identified as being hearing-impaired.

While a large segment of this group have difficulty comprehending only faint speech, over 2 million Americans have difficulty hearing normal speech, and an additional 1.5 million cannot understand normal or even amplified speech.

The profound sense of isolation and the resultant withdrawal have devastating effects on both their personal lives and on our society. Without correction, in the child, learning disabilities, difficulty with speech, and problems of behavior are the most commonly recognized manifestations of hearing impairment; while in the adult, impaired performance, social withdrawal, and even isolation too often result.

The economic and social impact of hearing loss and deafness on our society and its citizens are indeed profound, but yet unrecognized. These subcommittee sessions will undoubtedly serve as a milestone in our national effort to find meaningful solutions to these problems.

The National Institute of Neurological and Communicative Disorders and Stroke, the NINCDS, of the National Institutes of Health is the focal point in the Department of Health and Human Services for biomedical research on the problems of hearing loss and deafness.

Mr. Chairman, we are very proud of the term "communicative" in our name, for it symbolizes our responsibilities and our dedication in research areas relevant to the problems of hearing, language, and speech.

Our research endeavors are conducted in our laboratories and clinics in Bethesda, Md., and by means of our research grant and contract programs throughout the Nation. Our activities focus on improving the understanding of how the ear and brain translate sound into information; how this process can be damaged both peripherally and centrally; how we might better intervene both to prevent damage and to compensate for as yet irreversible types of hearing loss; and finally, how the results of this research can be disseminated to medical and rehabilitative practitioners.

Our approach includes research from the most basic physical and chemical understanding of the hearing system, through medical research directed at clinical problems of disease prevention and therapy, and more recently on the utilization of the most advanced technology to assist the hearing-impaired in the activities of daily living.

Recognizing the need for cooperative endeavors, these programs are often carried out in collaboration with our sister institutes at the NIH, such as the National Institute of Aging and the National Institute of Child Health and Human Development, and with other agencies having related responsibilities, such as the National Science Foundation and the Rehabilitation Services Administration.

We look forward to working with the recently established National Institute of Handicapped Research as its programs are initiated. Through these staff interactions, we are able to assure the highest quality of research and maintain momentum on targeted initiatives of high priority.

Mr. Chairman, I wish I could report that the Institute is on the threshold of a breakthrough for preventing hearing loss or deafness, or that we have the technology at hand to restore hearing to those who have lost it. Quite frankly, we are not. However, I assure you that our scientists and grantees are hard at work exploring every lead that has promise.

Both goals—prevention and restitution of function—are the goals of our biomedical research program. Progress is steady, but slow. The problems are enormous. We still know so little about how the ear and brain work. However, we have learned more about hearing and more about hearing loss in the past 15 years than we did in the previous 50 years.

However, I can assure you we are not resting on the couch of our past accomplishments. For the record, I will submit two recent documents describing the details of our efforts and plans. The first is a "Report of the Panel on Communicative Disorders," one segment of our Institute's long-range strategy presented to the Congress at its appropriations hearings last year.

This report has brought together the most innovative scientists in the United States to examine and to propose what opportunities exist for further research.

The other is a report on "Activities to Assist Hearing-Impaired Americans," prepared by a key member of our research staff, Dr. Earleen Elkins, who is with me here today. Dr. Elkins' report focuses on opportunities utilizing modern technology to assist those with hearing problems.

We believe these reports may be helpful to the subcommittee in its analysis of the research opportunities available for developing improved programs for prevention, therapy, and rehabilitation.

Sir, Dr. Elkins and I will be pleased to try to respond to your questions and to share with you what information we have available. Thank you.

Senator **Schweiker**. Thank you very much. First, I appreciate your short statement; it gives me a few more minutes to ask some questions.

I realize that Dr. Tower is at my other committee this morning, the Appropriations Committee, so I have to say he has a 100-percent valid excuse for not being here. I am just sorry that we could not schedule the two hearings on different mornings.

I did have a good session in my office with you and Dr. Tower just recently on this subject, so I know that he has gone over the issues, as well as yourself.

In the last 2 years, the Senate Labor-HEW Appropriations Subcommittee report has expressed our disappointment with the Institute's program and stressed the need to place a very high priority on hearing research. I want to make it clear that my disappointment applies primarily to the funding level; my remarks earlier were directed to the funding level.

I happen to think that $20 million for 20 million hearing-impaired and deaf people is a pittance in terms of any investment that we are making to solve the problems of our society, and I find it exceedingly disappointing. So that is my concern.

It is not surprising to me that you say in your statement, which is very accurate and unfortunately quite true, that we are not making any significant breakthroughs and cannot point to new things that we can really get excited about. I think that with this level of funding and with your point that we know so little about the ear, it is not surprising that we are not making major breakthroughs.

When you do not invest in basic research to know more about the ear if significant gains are not made. I am not surprised. Again, I am not holding you folks accountable for the level of spending, and I want to be fair about that.

Since the language I had written into the Senate committee report last year we have only increased the hearing's share of funds by $2 million, which seems like an awful small increase, in view of our report language on the lack of funding. I wonder if you would comment on that.

These are your figures. We went from $18.1 million for hearing and equilibrium research in 1979 to $20.3 million.

Dr. **Goldstein**. That is right, sir.

Senator **Schweiker**. Can you shed any insight on why we only went up $2 million?

Dr. **Goldstein**. Yes, sir. When the appropriation was received, the Director of the Institute and his advisory group, the National Advisory Council, looked at the very many competing priorities for funds. I call to your attention, sir, that our increase was barely keeping up with inflation, and so our increase permitted us to maintain essentially our program effort at what we considered a floor level, rather than to expand our effort in any of the four major disorder areas of our concern.

To be perfectly honest, sir, to increase our funding for additional research in the communicative disorders, including hearing, would have meant taking funds from research on multiple sclerosis, on stroke, on paraplegia, and several other areas.

So, even though I am not particularly proud of my response, what I am saying is we tried to utilize the funds across the board to maintain our research floor, rather than to punish one program in the name of another one.

Senator **Schweiker**. Well, there is no question that in any institute, you are vying for funds for different areas. But it seems to me that the Institute increase from $212 million in 1979 to $242 million in 1980 is about a 15-percent increase.

Now, we end up giving hearing-impaired and deaf people a 10-percent increase; yet, the Institute had a 15-percent increase. Level funding does not account for this difference here; it looks like hearing research got short-changed, frankly. We did not even get our pro rata share for the hearing-impaired and deaf people within the Institute, and that has been my criticism over the years. The Institute got a 15-percent boost, and hearing and equilibrium, by your figures, got a 10-percent boost. A pro rata share would have been at least $3 million.

Dr. **Goldstein**. Yes, sir. Federal bookkeeping is a very interesting phenomenon. Over the last 5 years, the programs of the NINCDS across the board as a total institute have not kept up with inflation. In fact, our purchasing power has been decreasing in terms of the purchasing for research.

Three areas were singled out about 5 years ago to be protected against decreases in purchasing power. Two of these areas, interestingly enough, sir, are of concern to the overall responsibilities of the committee. One is paraplegia and the other is the hearing-impaired.

So, over this period of time, we have been very cautious not to permit our decrease in purchasing power to affect three areas, hearing-impaired being one. This was done, quite honestly, at the price of the other research areas—stroke, multiple sclerosis, Huntington's disease, and others.

Therefore, sir, it was the opinion and advice of our National Advisory Council that the time had come to bring everyone up to par with those funds. You are absolutely correct that in the year that we are in at the moment, the proportion of funds distributed to the communicative disorders program would appear to be less than a proportion across the board.

However, in the 5 years, I think that if you will look, you will see that, in fact, the communicative disorders and hearing program have maintained clear parity with all of our other increases across the board.

Senator **Schweiker**. Does anybody on that advisory committee have expertise in hearing-impaired research?

Dr. **Goldstein**. Yes, sir. We have 20 experts on that committee; one is Dr. Bobby Ray Alford, professor and chairman of the Department of Otolaryngology at Baylor University School of Medicine. The second is Dr. David Limm, professor of otolaryngology at Ohio State University; also Dr. Sidney Peerless, an otolaryngologist in Cincinnati, Ohio, and Dr. Franklin Cooper of Yale University. All four are experts either in the clinical disorder area or in research.

Senator **Schweiker**. In your judgment, what do we need to do for hearing research programs within the Institute to get it off the dime and to get something moving to get some basic work done. Would you say we should do more either in terms of finding out about the ear mechanism or in terms of training more researchers? What is it that we need to do to get this program moving?

Dr. **Goldstein**. In my order of priorities, I would frankly urge that we need to give consideration to the recruitment and training of the next generation of the brightest young scientists, because the problems we are facing will require new methodology and the incorporation of evolving methodology into research.

It is imperative that we prepare this new generation of scientists for these problems. The reason I give great stress to this is because young scientists go where they think they will have stability and where they think they will be able to move ahead with their careers. Unfortunately, in the area of hearing the probability of a breakthrough anytime in the near future is fairly small, so these young people must invest their lives in an area where they do not see a remarkable breakthrough occurring.

Therefore, we must train them and give them stability so that they can move ahead with comfort in these areas and not find themselves in a fluctuating budget situation; so our first priority is training. Our second priority is stability.

Senator **Schweiker**. Is what?

Dr. **Goldstein**. Stability; the opportunity to know that if they are doing good research, that next year their funds will not be cut off.

Senator **Schweiker**. Well, I think they are both very valid points, doctor. Unfortunately, as I am sure you are well aware from other hearings that I have been sitting in on, the administration's 1981 Federal budget provides for no new training funds and no funds even for renewal training grants. You are absolutely right but, as much as I agree with you, the tragedy is that the administration has made no recommendation for any funding. So we are sort of in a "Catch 22" here; we cannot get anywhere because we have no recommendation.

Again, it is not your prerogative to make that recommendation, but I think it is important for the record to show that this is the problem and that we have not done anything to improve the situation for fiscal year 1981.

How many more dollars or effort are really needed to find out how a human being hears in terms of the basic mechanism? How far away are we from understanding that basic mechanism, which certainly has to be fundamental to any real breakthroughs in hearing research—3 years, 5 years, 10 years? How far away are we from understanding something so basic and fundamental as one of our senses? We seem to understand a lot more about our eyes; why not our ears?

Dr. **Goldstein**. All right, sir. Let me take the easier question of why we do not understand more about the ear. The phenomenon of hearing, not only in terms of the transmission of sound, but the translation of sound into understanding so that it is not just noise or static, is probably one of the most complex mechanisms that the ear and human brain has to contend with.

There are innumerable way stations along the way; it is a multifaceted problem, as we call it, with three loci in the ear and probably up to seven loci of activity in the brain. This is why I was so hesitant to respond to how close this understanding is, because we have multiple mechanisms to work with.

Interestingly enough, we probably know more about the peripheral mechanism, with one exception, than we do about the central mechanism. We now have a good understanding of how sound is transmitted to the nerve cell, but we are at a loss of understanding as to how a pressure stimulus is converted biochemically into an electrical stimulus in the inner ear.

At the other end, we do not yet to understand how an electrical stimulus is converted back into a chemical stimulus, because that chemical stimulus crosses from the neurone and tells another neurone what the first neurone did; this occurs through four different way stations.

So, even though it would seem a disconnected effort, there are scientists looking at each one of these aspects to look for the key. Vision, which is an important national problem and an exciting research program, is a much lesser problem. We know the key there of how the retina transforms light into electrical energy. We do not know how sound converts into electrical energy.

If you ask me, will 3 years tell us that answer, I must say I doubt it.

Senator **Schweiker**. My guess would be that if I asked somebody in eye research the same question about 10 or 15 years ago, they would have come up with almost the same answer. I realize you had nothing to do with this, but I think the record ought to show that the Eye Institute for many years was part of another Institute and had a lot of trouble getting funding and getting enough focus and attention. Then the Lions Club decided to make it a national project, and somebody introduced a bill. Now we have a National Eye Institute, and it is spending $113 million a year for eye research, compared to $20 million for ear research.

I think that is the key as to why we know so much about eyes and know so little about ears. Here we are; we are bottom man on the totem pole with $20 million out of a $250 million budget. We get a 10-percent increase, and everybody else gets a 15-percent increase.

I realize that that is a little out of your province, but I think that is really at the root of why we know so little about the ear, and I concur that we do know very little about the ear.

Well, thank you very much, doctor; we appreciate your participation today. Thank you for being here.

Dr. **Goldstein**. Thank you for the opportunity of providing you with this information.

Senator **Schweiker**. I wanted to thank Dr. Elkins as well.

[The prepared statement of Dr. Goldstein follows:]

For Release Upon Delivery

Statement of Dr. Murray Goldstein
Deputy Director; National Institute of
Neurological and Communicative Disorders and Stroke
National Institutes of Health
Department of Health and Human Services

For the Handicapped Subcommittee of the
Senate Labor and Human Resources Committee

February 6, 1980

I am grateful for the opportunity of appearing before this Subcommittee on the Handicapped to discuss the problems of hearing loss and deafness.

Hearing loss and deafness are among the most common and the most insidiously devastating afflictions of modern man. Approximately ten percent of our population or over 20 million individuals in the United States have been identified as being hearing impaired. While a large segment of this group have difficulty comprehending only faint speech, over two million Americans have difficulty hearing normal speech and an additional 1.5 million cannot understand normal or even amplified speech. The profound sense of isolation and the resultant withdrawal have devastating effects on both their personal lives and on our society. Without correction: In the child, learning disabilities, difficulty with speech and problems of behavior are the most commonly recognized manifestations of hearing impairment; while in the adult, impaired performance, social withdrawal and even isolation too often result. The economic and social impact of hearing loss and deafness on our society and its citizens are indeed profound but yet unrecognized. These Subcommittee sessions will undoubtedly serve as a milestone in our national effort to find meaningful solutions to these problems.

Dr. Donald Tower, Director of the NINCDS, has asked me to transmit his sincere regrets for not being able to be present today. He is testifying before the Senate Committee on Appropriations, on the Institute's budget for fiscal year 1981.

The National Institute of Neurological and Communicative Disorders and Stroke (NINCDS) of the National Institutes of Health (NIH) is the focal point in the Department of Health and Human Services (DHHS) for biomedical research on the problems of hearing loss and deafness. We are proud of the term "Communicative" in our name for it symbolizes our responsibilities and dedication in the research areas relevant to the problems of hearing, language and speech.

Our research endeavors are conducted in our laboratories and clinics in Bethesda, Maryland, and by means of our research grant and contract programs throughout the nation. Our activities focus on improving the understanding of how the ear and brain translate sound into information, how this process can be damaged both peripherally and centrally, how we might better intervene both to prevent damage and to compensate for as yet irreversible types of hearing loss and how the results of this research can be disseminated to medical and rehabilitative practitioners. Our approach includes research from the most basic physical and chemical understanding of the hearing system, through medical research directed at clinical problems of disease prevention and therapy, and more recently on the utilization of the most advanced technology to assist the hearing impaired in the activities of daily living.

Recognizing the need for cooperative endeavors, these programs are often carried out in collaboration with our sister Institutes at the NIH, and with other agencies having related responsibilities such as the National Science Foundation and the Rehabilitation Services Administration. We look forward to working with the recently established National Institute of Handicapped Research as its programs are initiated. Through these staff interactions, we are able to assure the highest quality of research and maintain momentum on targeted initiatives of high priority.

Mr. Chairman, I wish I could report we are on the threshold of a breakthrough for preventing hearing loss or deafness, or that we have the technology at hand to restore hearing to those who have lost it. Quite frankly, we are not. However, I can assure you we are hard at work, exploring every lead that has promise. Both goals--prevention and restoration of function are the goals of our biomedical research program. Progress is steady, but slow. The problems are enormous--we still know so little about how the ear and brain work.

For the record, I will submit two recent documents describing the details of our efforts and plans. The first is a "Report of the Panel on Communicative Disorders," one segment of the NINCDS Long Range Strategy presented to the Congress at its appropriation hearings last year. The other is a report on "Activities To Assist Hearing-Impaired Americans" prepared by a key member of our research staff, Dr. Earleen Elkins, who is with me here today. We believe these reports may be helpful to the Subcommittee in its analysis of the research opportunities available to us for developing improved programs of prevention, therapy and rehabilitation.

Dr. Elkins and I will be pleased to try to respond to your questions and to share with you the information we have available to us.

Thank you.

Senator **Schweiker**. Our next panel is Mr. Howard E. Stone of Bethesda, Md., and Mr. Desmond Carron of Bethesda, if they will come forward, please.

Mr. Stone was with the CIA for 25 years. I might say it is OK to mention that now; it seems like they are back in vogue again, Rocky, so we will put that in as an adjunct.

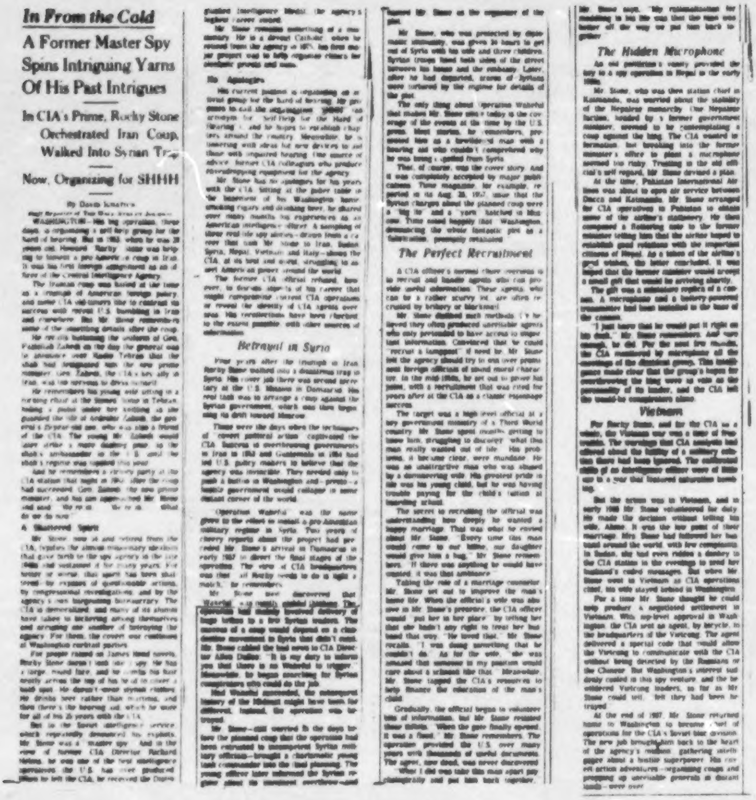
Mr. Helms, the former CIA Director, said that Mr. Stone was one of the best intelligence operatives the United States has ever produced. When he left the CIA, he received the Distinguished Intelligence Medal, the agency's highest career award.

Rocky is accompanied by Desmond Carron, the parent of a severely hearing-impaired child. Mr. Carron has done a lot of private inventing to make up for the gaps on the market for the hearing-impaired.

I might say that I would like to submit in the record an article from the Wall Street Journal, dated October 19, 1979, captioned, "A Former Master Spy Spins Intriguing Yarns on His Past Intrigues. In CIA's prime, Rocky Stone orchestrated Iran coup and walked into Syrian trap. He is now organizing for SHHH".

[The material referred to follows:]

[From the Wall Street Journal, October 19, 1978]



In From the Cold

A Former Master Spy Spins Intriguing Yarns Of His Past Intrigues

In CIA's Prime, Rocky Stone Orchestrated Iran Coup, Walked Into Syrian Trap

Now, Organizing for SHHH

By DAVID IGNATIUS

Staff Reporter of THE WALL STREET JOURNAL

No Apologies

A Shattered Spirit

Betrayal in Syria

The Perfect Recruitment

The Hidden Microphone

Vietnam

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Senator SCHWEIKER. So, with that background, will you tell us about SHHH and what you are trying to do, Rocky?

STATEMENT OF HOWARD E. STONE, BETHESDA, MD., AND DESMOND CARRON, BETHESDA, MD., A PANEL

Mr. STONE. Thank you, Mr. Chairman. You have already told everyone my name is Rocky, so I do not have to repeat that. For more than 30 years, I was severely deaf. In contrast to our first three speakers, I have the problem. In the past 2 years, it has gotten worse. Now, I am profoundly deaf, with a hearing loss in excess of 110 decibels. I have severe tinnitus; for me, that is a high-pitched, shrill, constant ringing in my ears. Nevertheless, I am functionally hard of hearing.

For 25 of those 30 years to which I referred, I was with the CIA. I rose to senior officer status in operations where the emphasis is on dealing with people rather than with paper. It is to the great credit of CIA personnel and management that they related to me on the basis of my abilities rather than on the basis of my disabilities. That was very fortunate for me.

But there are millions of people much less fortunate than I. Every day, 5,000 more people reach the age of 65. With advanced age come many problems, predominant among them is loss of hearing. Deafness hinders communication with people. It impairs our ability to be productive and to engage in social intercourse. It restricts our constructive use of leisure time. In fact, deafness impairs anything which can be manifest only in terms of our relationship with others, which, in turn, depends on our communication with them. Deafness, particularly among the elderly, often leads to poor self-image, isolation and despair. It can affect our mental and physical health and, ultimately, our will to live. And for those who may not be affected so drastically, it profoundly diminishes the quality of life.

Statistics vary, but we are told that there are 16.2 million people in America who suffer from hearing loss. Somewhere along the line, people who are deaf and people who are hard of hearing came to be included in a term called hearing-impaired. Today, when we use that term, keep in mind that of those 16.2 million, some 3 million are deaf and the rest, more than 13 million, are hard of hearing. This is no minor distinction; in fact, it is the focal point of this hearing.

Deaf people are well organized, aggressive in pursuit of their rights, and more visible. Some use an alternative language—signing—and function in community. Hard of hearing people frequently refuse to admit they cannot hear well. They are not organized; they are usually unaware of their rights; they desire to remain invisible and have no alternate form of communication.

Senator SCHWEIKER. I might say, Rocky, that about three or four of my Senate colleagues will look at my hearing aid and say they ought to wear one, but do not. So you are exactly right in that respect.

Please go ahead.

Mr. STONE. That is one of the problems. I think we have some ideas about how to combat that.

Rather than function in community, they tend to withdraw, to become isolated, to live in fear and in frustration. Deaf people get most of the attention being given to the problem of deafness, and they receive most of the resources available to combat the problem. They should; they need it, they deserve it. Yet, there remains that silent majority of some 13 million who desperately need help and have not yet discovered, in sufficient numbers, how to help themselves.

People who have not identified themselves as "hearing-impaired" have probably had normal or near normal hearing most of their lives before acquiring a hearing loss. They are less likely to seek help as "hearing-impaired persons." Denial of the problem is deeply rooted and widespread, and as you have indicated, it extends even into the Senate. Such denial foregoes remedy. A vicious circle develops. If no problem exists, society need do nothing about it. Myths persist and hearing-impaired persons continued to be denied full access to community services, religious services, medical and legal counseling, and common leisure time activities. It is not difficult to see how isolation develops.

For a variety of reasons for which I cannot take credit, I cope with my disability better than most. Nevertheless, let me describe some aspects of my problem, which I hope will be covered in more detail by other witnesses before this committee.

I retired from the CIA at age 50 because I wanted to involve myself in other activities. I am now 54, and if I were still working, I would probably be under consideration for involuntary retirement. Why? Because I can no longer use the telephone for substantive conversation and I can barely use it for interpersonal relationships. I now have a TTY, a teletypewriter, but its utility for me is limited because so few others have one and little is being done to insure that essential public services——

Senator SCHWEIKER. How much does a TTY cost?

Mr. STONE. Somebody else in the room could probably answer that question. The Veterans Administration paid for mine. I think it is around $750. Desmond, do you know?

Mr. CARRON. You are talking about the new solid state LED type?

Senator SCHWEIKER. Yes.

Mr. CARRON. I think it is in the neighborhood of $700. It might be much more.

Senator SCHWEIKER. Excuse me. Go ahead.

Mr. STONE. OK. Very little is being done to insure that essential public services are made accessible in communication with we hard of hearing people. Nor can I communicate in many hotels, transportation centers or public buildings, because the phone itself is incompatible with my hearing aid. I hope we will hear more about this today, along with indications of how the Congress can help.

I have conducted many experiments with the audio loop. Desmond Carron, the designer of the one I use is here with us today. I should note that the audio loop is controversial. One reason is that many people think a wire is a wire and you can throw it around a certain area and everybody will hear. That is not the case. There are many loops that have been installed in various buildings around the country that do not work. One of the reasons they do not work is that the specifications are not of the type that will actually provide relief for people like myself who can benefit from the loop. Mr. Carron can elaborate on that later.

Several of us here—in fact, many, I think—could not participate in this hearing without it, and yet it is not in widespread use. I believe it should be used in public meeting places, courthouses, schools, theaters, churches, and so forth. Legislation by Congress is very appropriate in this area.

I never used to watch television. Now, I watch the news and a few other shows because I have had my TV equipped with an audio loop. Closed captioning will also help, but all of these technical aids are expensive, and the expense is borne by the impaired person, unless you happen to be a veteran, as in my case, and the Government pays for it. Congressional action in this area could permit more use of available remedial aids and relieve the financial burden from those now using such aids.

You can see that I wear a hearing aid, a very powerful one. If I had bought this hearing aid this morning, it would be no better qualitatively than if I had bought it 10 years ago.

Senator **Schweiker**. I think that is a very important point to make. That is exactly right, exactly right.

Mr. **Stone**. Some hearing aid manufacturers protest that the 3.5 million market is too small to afford high quality research and development. Others say the industry has reached its outer limits in technology, and that only a switch comparable to that of from wood to plastic will permit new developments of quality. Consumers perceive a dated instrument, inexpensively produced and sold at considerable profit as the real problem. But the main point is, for whatever reason, there is little movement toward improved quality in hearing aids in the most technological country in the world. We are at an impasse and, apparently, only the Government can change the situation.

But even if hearing aids were what they should be, many persons could not afford them. The least effective are very expensive. The largest group of potential hearing aid users are the elderly; they are also our largest group of poor people. For them, there is no assistance available from anyone—yet.

I cannot hear the phone ring, nor the doorbell, smoke alarm or alarm clock. I have invented and have a prototype with me of a device which lets me feel all of those things. Everyone in my circumstances thinks it is great, but cost and market factors again will probably prevent it from being used by those who need it most. It seems we must once more turn to the Government for progress.

Dr. Giannini mentioned that a number of visual aids were necessary for the hard of hearing and the deaf for use as alarm systems. I suggest that this is probably much more practical, because you can put it on your body, walk around the house, sleep with it on, do anything with it, and be alerted to any kind of danger signal, telephone call, or alarm clock.

Senator **Schweiker**. And how does it work, simply, Rocky?

Mr. **Stone**. It is geared to the frequencies that the telephone rings on. The doorbell is a little more complex. If it is a chime, it does not work too well. It works very well for alarm clocks and smoke detectors. I simply put it on my body, and when the phone rings, this vibrates; there is no sound at all. If, for example, I am watching television, I would never hear the phone ring, but this vibrates and then I know the phone is ringing. Even when I do not watch television, I might not hear the phone ring, but I can be anywhere in the house and hear it with this; I feel it.

But there is an area of much greater importance. Use of technological advances is of little value unless people's attitudes and perceptions can be developed to a point of acceptance of the human worth and dignity of individuals who happen to suffer from hearing loss. This development of attitude is necessary among both hearing-impaired and hearing people. Too many continue to view hearing loss as signs of mental and/or physical incompetence. Ignorance about what hearing loss is, and is not, is profound.

I have recently organized an educational organization called Self Help for Hard of Hearing People, Inc., SHHH. We do not anticipate Government support for our organization, but we do expect Government participation in the massive war on ignorance in this field which affects more Americans than any major disease. Government's performance in this area is spotty. It needs to be deepened. SHHH will be educating those it can about the nature, cause, complications and remedial aids to hearing loss. We will instruct our members on detection, management and possible prevention of hearing loss, but we can only reach a small audience compared to Government. If Congress embarked upon a wide dissemination program of educational materials in those categories, it could pay for itself in reduced costs in the medical health field. This information has got to get to the people concerned. Walter Lippmann used to say that providing individuals with information on a given subject enlarges his or her environment and usually the individual reacts favorably to that expanded environment. Only the Government can do this on a large scale.

Finally, the need for research is great. The ear mold I am wearing is imperfect enough to diminish the utility of my hearing aid and to cause me discomfort. Listen to what happens when I have this hearing aid on microphone and I turn it up to its full volume. You can hear the feedback, the distortion, the noise that I am getting, and it is unusable. I believe that we have sufficient ingenuity to produce an ear mold which fills all the cavities of the ear, but it probably will not be done commercially.

Senator **SCHWEIKER**. This is one of the things that hearing aid users complain the most about. If I hear any one complaint that is it; you put your finger right on it.

Mr. **STONE**. The National Institute of Neurological and Communicative Disorders and Stroke, from whom we have just heard, does an excellent job, but it has an extremely broad mission. Unless special attention is given to communicative disorder problems in basic research, there is little hope of significant breakthrough in the prevention and alleviation of deafness. And if such research as NINCDS now carries out on the organ of hearing and the auditory nerve is not continued and developed further, hereditary deafness is unlikely to be understood and prevented. But budget, space, and other problems persist.

I might inject here that when I lost my hearing, the cause was undetermined, although presumed to be concussion and noise. At that time, there was no hereditary suspicion. I now have a son who has a hearing impairment exactly like mine, but not as great. It is clear to me that in my family, there is a latent tendency toward this kind of nerve deafness. This can skip two or three generations before it shows up again, but the important thing is that the aspects of hereditary deafness which the neurological and communicative disorders and stroke organization is investigating is something that is very, very important to a great many of us.

Within the Rehabilitation Services Administration, the Deafness and Communicative Disorders Office has responsibility for working on behalf of the hearing-impaired. Almost 1½ years ago, I visited DCDO and volunteered to work, free, as an intern to learn what that office was doing for the hard-of-hearing. I was told that DCDO does nothing for the hard-of-hearing.

I then volunteered to work, free, as an intern to devise programs that DCDO should have for the hard-of-hearing. They did not want any. That experience was a prime mover in my founding Self Help for Hard-of-Hearing People, Inc.

Senator SCHWEIKER. You are saying that the Government was not listening.

Mr. STONE. Pardon?

Senator SCHWEIKER. The Government was not listening?

Mr. STONE. Somebody was not listening. I felt that if I could do as well as I did in the CIA, I ought to be able to do something, when all they needed was to provide a desk or some space for me to work in. I think that I could have made some contribution, but there was no interest. One of the complaints of DCDO is that they are understaffed. I do not think that is accurate.

Senator SCHWEIKER. Why do I not write a letter to the commissioner and make the offer again? Are you still willing to serve on a volunteer basis?

Mr. STONE. I would not offer now, Senator, because I am in the middle of something which is very, very exciting, and, I think, useful. I have set up an organization which is a national organization, and from the mail that I am getting, it looks like it is something whose time has come.

Senator SCHWEIKER. You think you will get more help from that than from the Government, and I am inclined to agree with you. Please go ahead.

Mr. STONE. I think I can do better working with the people rather than with the Government.

I want to find our people who have hearing loss; I want to involve them in activities which will help bring them alive again, particularly the older ones. I want to help develop public and professional acceptance of their needs and values. Then I am convinced that they will seek alternative communication skills, comfortable and suitable to their needs.

We hearing-impaired have allowed our adverse image to endure. It is time that that changed. Now, Mr. Chairman, we wish to plead our own cause. Too often have others spoken for us, and for too long. We will help each other and ourselves. What we seek from hearing people is their understanding that our similarities to them are far greater than our differences; that we need relationships on the normal human level, neither above it as superhuman achievers, nor below it as ones who cannot cope; that the need is to go beyond the disability to the person, and accept people as they are, for indeed we all have problems.

So, while we try to help ourselves, we look to the Government to rectify existing inequities of access, cost, and inadequate public information in the field of hearing loss, for although we cannot overcome our disabilities, together we can overcome their handicapping effects.

Mr. Chairman, when you were talking to Dr. Goldstein, the dialog just reinforced my conviction that what really has to take place goes beyond emphasis from the professionals, or even from the legislators. In order to really get the kind of specialized focus that we need on the problem of hearing loss, we have to develop our own constituency.

We have to build a community of the hard-of-hearing so that we can join forces with the existing, effective community of the deaf, and speak with one voice to the Government in areas which affect us all. Thank you very much.

Senator SCHWEIKER. Well, I concur with that statement; I am glad to see you take the leadership in it, Rocky.

Does your colleague have a statement?

Mr. CARRON. No, sir.

Senator SCHWEIKER. All right. Would you like to demonstrate this system now?

Mr. STONE. I would just like to say something. This gentleman is the designer of the loop that permits many of us to participate here today and alleviates our plight in a lot of different ways. It came about in a way that can only be described as a love story, because Desmond and his wife have devoted the major part of their existence to providing a means for their deaf daughter to hear sound and to ultimately speak.

With that background, I would like Desmond to just indicate what the loop is and what it is not.

Mr. CARRON. I am sorry, Senator, that I was not prepared; I did not think that I was going to get in the limelight, as it were. If I might make a couple of comments, when Senator Randolph asked for a show of hands to count the number of hearing-impaired present, by my observation he did not reach many of the people who are now operating on the loop, because he was not close enough to the microphone.

Most of the people using the loop and not using the interpreter were not aware of his request. I just thought I would clarify that. He was correct; there were more impaired than he observed.

Mr. STONE. Let me interrupt for 1 minute. The reason I want to interrupt, Desmond, is that the way the Senator asked the question was, "How many are deaf?" It may well be that some people who are hearing on the loop do not consider themselves deaf, and that is a point of distinction.

I know that I started to raise my hand, and then I put it down. The reason that I started to raise it is that I am technically deaf, but I am functionally hard-of-hearing. I do not perceive myself to be deaf, and I think there might be that mixup too.

Mr. CARRON. Yes.

When addressing the Director of NIH, you made a reference to the loop as far as it being of benefit to those with moderate to severe losses, as opposed to the profoundly deaf; I believe that was the distinction you made.

I should like to observe that the loop has surprised me as well as others in the benefits it offers to profoundly deaf individuals, such as at schools for the deaf. Anyplace that we have tried it out, it has been very successful, and it has proved to be much easier to provide a loop system for the more seriously impaired than for the less seriously impaired.

For you, it would be difficult to make a loop that would improve your response. It is much easier to benefit somebody with a more severe loss. That is just the way it works out.

Senator SCHWEIKER. Could you explain briefly how it works?

Mr. CARRON. The loop system is not a new approach; it has been around for a great many years.

Senator SCHWEIKER. The Government just has not known about it.

Mr. CARRON. Pardon?

Senator SCHWEIKER. The Government just has not known about it.

Mr. CARRON. Well, the various school administrations throughout the country are aware of it, and they have spent huge quantities of money installing commercial systems in their classrooms.

Senator SCHWEIKER. Well, then, I will say that the Federal Government has not known about it.

Mr. CARRON. That may be.

Senator SCHWEIKER. OK. We state the problem as it is.

Mr. CARRON. However, the commercial systems do not perform adequately, and as a result, have fallen into disrepute. They are regarded as having problems; I do agree with that. But there are very few things that do not have problems, and if the merits outweigh the problems, they should be pursued.

Senator SCHWEIKER. One out of three microphones that I use back in my State do not work when I go up and make my speech for the first time. The PA systems are the worst offenders; they have about a 33-percent failure rate, right off. Go ahead.

Mr. CARRON. The loop system, in effect, is very simply an amplifier that takes a sound source—if I had had an opportunity to speak to the technicians ahead of time, we could have eliminated the microphones by simply tapping into your sound system here.

Senator SCHWEIKER. So you could have tapped right into this system?

Mr. CARRON. I could have tapped into your system if I had had an opportunity to speak to your technicians, and everything that is picked up by any of your mikes would then be in the loop system. The amplifier simply generates a signal and pumps it into this loop.

Senator SCHWEIKER. The wire loop that is on the floor?

Mr. CARRON. On the floor. It is a current cycling over and back in the wire which generates a magnetic field. Now, the majority of hearing aids—not all, but the great majority of hearing aids have telecoils installed for use with the telephone. The magnetic field intersects the windings of the coils—I am trying to remain nontechnical here—and generate minute electrical pulses inside the windings. When the hearing aid is switched to the telecoil, the mike is bypassed, and these pulses are then transmitted into the amplifier and the result is the reproduction of the sound that originally entered the microphone.

The only thing that is unique about this system is that it is successful with a large majority of the people that use it, because it takes into consideration the great disparities between the sensitivities of one brand of hearing aid and another, or one model and another of the same manufacturer. There are no standards as to the sensitivity of the telecoil in the current hearing aids, so what works for one will not work for another.

This is simply an attempt to get around that problem by generating an extremely powerful signal that will accommodate all of them. Some people will have to turn the volume down; others may have to turn it up a little bit.

Senator **Schweiker**. So you are saying that your audio loop system will work for anyone who has the capability to use a telephone with their hearing aid?

Mr. **Carron**. It should certainly be quite successful if they are successful on the telephone. Some of those people who are not successful on the telephone will be quite successful on this also; it goes beyond that. A great many people are not able to use the hearing aid on the telephone.

Senator **Schweiker**. What does something like this cost? I realize it is probably a prototype and not a production model, but what does it cost?

Mr. **Carron**. It can be very inexpensive. I do act as a consultant for some groups; they have technicians of their own, and it is simply the cost of the material and a few hours of labor. For a typical room, it would run $400 to $800 or $900; less than $1,000 for almost any room that you care to loop.

The question is, do you need to loop an entire room, or, as we have done here, loop an area. I prefer to think of a designated area, because then I can provide a very strong, uniform signal with a wide bandwidth, without having an entire room full of amplification.

Senator **Schweiker**. What are some of the groups that you work for that do this kind of thing?

Mr. **Carron**. I am sorry; I do not quite understand your question. Do you mean the groups I work with that use the system?

Senator **Schweiker**. Yes.

Mr. **Carron**. Well, there is the Washington Area Group for the Hard-of-Hearing. They are the individuals who got me involved to begin with. I have been making loops for many years for hearing-impaired individuals who are profoundly deaf, such as my own daughter. I have been providing systems of this type to school systems.

But the first time I encountered the adult community was when the Washington Area Group for the Hard-of-Hearing approached me about repairing a system that had been designed and provided less than satisfactory performance. It was at that point that I brought my experience with loops to bear and built a single unit for them, and that was the prototype for what we have here today.

They proved to be very excited about it, and very successful. Prior to that, I had not even considered the possibility that it would be of benefit. I was addressing myself to the very severe, profoundly deaf prior to that. We now have it installed in some churches in the immediate area. The civil service has one, which they purchased for an employee.

Incidentally, the Office of Personnel Management is scheduled to talk to me on Saturday coming about looping some of their hearing rooms. So there is some progress being made in the Federal Government in regard to installation of audio loops.

Senator SCHWEIKER. Good.

Mr. CARRON. That is scheduled for this coming Saturday and it was just arranged.

Senator SCHWEIKER. Rocky, you mentioned that some hearing aids are equipped with a telephone attachment so that they can be used on the telephone, but without that attachment, you cannot use a hearing aid on the telephone because the telephone equipment is not compatible with it.

Now, maybe you or Mr. Carron could respond as to why the telephone equipment is not compatible and what we can do about it.

Mr. STONE. Well, actually, a lot is being done. There is a good organization called the Organization for the Use of the Telephone which has done a considerable amount of work in this field. They have been working both with the Government and with the telephone companies in an effort to get agreement to replace as many incompatible phones as possible and to make sure that new phones coming out are compatible.

However, the technical aspect of that is something that is beyond me, and perhaps Desmond can go further than I did. But there is one organization, at least, that works very, very hard on this subject, and has been effective in that field.

Senator SCHWEIKER. Do you have something to add?

Mr. CARRON. Not unless you want to get into the basic reasons why it was installed and removed.

Senator SCHWEIKER. Well, Congressman Long has a bill to do this in the House, and I do not believe there is one in the Senate. So I will put a bill in the Senate to do exactly the same thing, to make new telephones compatible with the present hearing aid systems.

Mr. CARRON. They just very simply do not have a need for the induction coil, so for economy reasons, they eliminated them and thereby eliminated the source of the magnetic field. Originally, the induction coil was installed as an economy measure to separate the local power supply from the longdistance power supply in the original telephones. It was not installed to benefit anybody in particular, other than the telephone company.

Senator SCHWEIKER. Did you have anything further to demonstrate on the system here?

Mr. CARRON. No, sir, unless there were some questions you would care to have an answer to.

Senator SCHWEIKER. All right.

Mr. CARRON. I can demonstrate the system if you or anybody else would be interested in it.

Senator SCHWEIKER. Can you do it in a couple of minutes?

Mr. **Carron**. Yes, of course.

Senator **Schweiker**. Go ahead.

Mr. **Carron**. This is simply a little telephone listener that I picked up at Radio Shack yesterday. It has a rubber suction cup which you attach to the telephone, and when somebody is talking on the telephone, you can turn this on and the entire family can sit around and listen to the conversation; that is all it is.

It also operates on the magnetic field that I am using for the loop, and so hearing people who do not have hearing aids can see that there is a signal in the loop and that it is functioning. It will not produce the quality that is provided in the loop, because this is geared to the telephone and its bandwidth is very limited. But it is definite evidence that there is a signal and demonstrates what is being heard within the loop.

Anything that I am saying now is being picked up by this (indicating), and it is responding to the same signal that the hearing aids are responding to; it simply is not giving the quality of output.

I do not know what else there is that you can demonstrate about the loop, other than the fact that people say they hear when they use it.

You can use it, if you will care to come down and step inside the perimeter of the loop, provided you have a telephone coil in your hearing aid.

Senator **Schweiker**. I do not.

Mr. **Carron**. You do not?

Senator **Schweiker**. No.

Is anybody sitting within the circle of the wire system? Can they hear us here?

Mr. **Carron**. Provided they have a hearing aid with a telecoil.

Senator **Schweiker**. Within the loop?

Mr. **Carron**. Yes.

Senator **Schweiker**. All right. Well, I want to thank you both, Rocky and Desmond, for coming here today and presenting what you have done on your own in the volunteer effort that I hope is going to stimulate the Government to do something in this area. That is why we are having the hearings. So thank you very much.

[The prepared statement of Mr. Stone follows:]

Prepared Statement of Howard E. Stone, Bethesda, Md.

MR. CHAIRMAN, LADIES AND GENTLEMEN:

MY NAME IS HOWARD STONE. MOST PEOPLE CALL ME "ROCKY". FOR MORE THAN THIRTY YEARS I WAS SEVERELY DEAF. IN THE PAST FEW YEARS IT'S GOTTEN WORSE. NOW, I AM PROFOUNDLY DEAF WITH A HEARING LOSS IN EXCESS OF 110 DECIBELS. I HAVE SEVERE TINNITUS. FOR ME, THAT IS A HIGH PITCHED, SHRILL, CONSTANT RINGING IN MY EARS.

FOR 25 OF THOSE 30 YEARS TO WHICH I REFERRED, I WAS WITH THE CENTRAL INTELLIGENCE AGENCY. I ROSE TO SENIOR OFFICER STATUS IN OPERATIONS WHERE THE EMPHASIS IS ON DEALING WITH PEOPLE RATHER THAN WITH PAPER. IT IS TO THE GREAT CREDIT OF CIA PERSONNEL AND MANAGEMENT THAT THEY RELATED TO ME ON THE BASIS OF MY ABILITIES RATHER THAN ON THE BASIS OF MY DISABILITIES. THAT WAS FORTUNATE FOR ME.

BUT, THERE ARE MILLIONS OF PEOPLE MUCH LESS FORTUNATE THAN I. EVERY DAY, 5,000 MORE PEOPLE REACH THE AGE OF 65. WITH ADVANCED AGE COME MANY PROBLEMS, PREDOMINANT AMONG THEM IS LOSS OF HEARING. DEAFNESS HINDERS COMMUNICATION WITH PEOPLE. IT IMPAIRS OUR ABILITY TO BE PRODUCTIVE AND TO ENGAGE IN SOCIAL INTERCOURSE. IT RESTRICTS OUR CONSTRUCTIVE USE OF LEISURE TIME. IN FACT, DEAFNESS IMPAIRS ANYTHING WHICH CAN BE MANIFESTED ONLY IN TERMS OF OUR RELATIONSHIP WITH OTHERS, WHICH IN TURN, DEPENDS ON OUR COMMUNICATION WITH THEM. DEAFNESS, PARTICULARLY AMONG THE ELDERLY, OFTEN LEADS TO POOR SELF IMAGE, ISOLATION AND DESPAIR. IT AFFECTS OUR MENTAL AND PHYSICAL HEALTH AND, ULTIMATELY, OUR WILL TO LIVE.

ALTHOUGH STATISTICS VARY, WE ARE TOLD THERE ARE AT LEAST 16.2 MILLION PEOPLE IN AMERICA WHO SUFFER FROM HEARING LOSS.

SOMEWHERE ALONG THE LINE, PEOPLE WHO ARE DEAF AND PEOPLE WHO ARE HARD OF HEARING CAME TO BE INCLUDED IN A TERM CALLED "HEARING IMPAIRED". TODAY, WHEN WE USE THAT TERM, KEEP IN MIND THAT OF THOSE 16.2 MILLION, SOME THREE MILLION ARE DEAF AND THE REST, MORE THAN 13 MILLION, ARE HARD OF HEARING. THIS IS NO MINOR DISTINCTION. IN FACT, IT IS THE FOCAL POINT OF THIS HEARING. DEAF PEOPLE ARE WELL ORGANIZED, AGRESSIVE IN PURSUIT OF THEIR RIGHTS, AND MORE VISIBLE. ~~THEY~~ Some USE AN ALTERNATE LANGUAGE (SIGN), AND FUNCTION IN COMMUNITY. HARD OF HEARING PEOPLE FREQUENTLY REFUSE TO ADMIT THEY CAN'T HEAR WELL. THEY ARE NOT ORGANIZED, THEY ARE USUALLY UNAWARE OF THEIR RIGHTS, THEY DESIRE TO REMAIN INVISIBLE AND HAVE NO ALTERNATE FORM OF COMMUNICATION. RATHER THAN FUNCTION IN COMMUNITY, THEY TEND TO WITHDRAW, TO BECOME ISOLATED, TO LIVE IN FEAR AND FRUSTRATION. DEAF PEOPLE GET MOST OF THE ATTENTION BEING GIVEN TO THE PROBLEM OF DEAFNESS AND THEY RECEIVE MOST OF THE RESOURCES AVAILABLE TO COMBAT THE PROBLEM. THEY SHOULD. THEY NEED IT AND DESERVE IT. YET, THERE REMAINS THAT SILENT MAJORITY OF SOME 13 MILLION WHO DESPERATELY NEED HELP, AND HAVE NOT YET DISCOVERED, IN SUFFICIENT NUMBERS, HOW TO HELP THEMSELVES.

PEOPLE WHO HAVE NOT IDENTIFIED THEMSELVES AS "HEARING IMPAIRED" HAVE PROBABLY HAD NORMAL OR NEAR NORMAL HEARING MOST OF THEIR LIVES BEFORE ACQUIRING A HEARING LOSS. THEY ARE LESS LIKELY TO SEEK HELP AS "HEARING IMPAIRED PERSONS". DENIAL OF THE PROBLEM IS DEEPLY ROOTED AND WIDESPREAD. SUCH DENIAL FOREGOES REMEDY. A VICIOUS CIRCLE DEVELOPS. IF NO PROBLEM EXISTS, SOCIETY NEED DO NOTHING ABOUT IT. MYTHS PERSIST AND HEARING IMPAIRED PERSONS CONTINUE TO BE DENIED FULL ACCESS TO COMMUNITY SERVICES, RELIGIOUS SERVICES, MEDICAL AND LEGAL

COUNSELING, AND COMMON LEISURE TIME ACTIVITIES. IT IS NOT DIFFICULT TO SEE HOW ISOLATION DEVELOPS.

FOR A VARIETY OF REASONS FOR WHICH I CANNOT TAKE CREDIT, I COPE WITH MY DISABILITY BETTER THAN MOST. NEVERTHELESS, LET ME DESCRIBE SOME ASPECTS OF MY PROBLEM WHICH I HOPE WILL BE COVERED IN MORE DETAIL BY OTHER WITNESSES BEFORE THIS COMMITTEE.

I RETIRED FROM THE CIA AT AGE 50 BECAUSE I WANTED TO INVOLVE MYSELF IN OTHER ACTIVITIES. I AM NOW 54 AND IF I WERE STILL WORKING, I WOULD PROBABLY BE UNDER CONSIDERATION FOR INVOLUNTARY RETIREMENT. WHY? BECAUSE I CAN NO LONGER USE THE TELEPHONE FOR SUBSTANTIVE CONVERSATION AND I CAN BARELY USE IT FOR INTERPERSONAL RELATIONSHIPS. I NOW HAVE A TTY (TELETYPEWRITER), BUT ITS UTILITY FOR ME IS LIMITED BECAUSE SO FEW OTHERS HAVE ONE, AND LITTLE IS BEING DONE TO ENSURE THAT ESSENTIAL PUBLIC SERVICES ARE MADE ACCESSIBLE IN COMMUNICATION WITH WE HARD OF HEARING PEOPLE. NOR CAN I COMMUNICATE IN MANY HOTELS, TRANSPORTATION CENTERS OR PUBLIC BUILDINGS BECAUSE THE PHONE ITSELF IS INCOMPATIBLE WITH MY HEARING AID. I HOPE WE WILL HEAR MORE ABOUT THIS TODAY ALONG WITH INDICATIONS OF HOW THE CONGRESS CAN HELP.

I HAVE CONDUCTED MANY EXPERIMENTS WITH THE "AUDIO LOOP". (THE DESIGNER OF THE LOOP I USE IS WITH US TODAY.) SEVERAL OF US COULD NOT PARTICIPATE IN THIS HEARING WITHOUT IT. AND YET, IT IS NOT IN WIDESPREAD USE. I BELIEVE IT SHOULD BE USED IN PUBLIC MEETING PLACES, COURTHOUSES, SCHOOLS, THEATRES, CHURCHES, ETC. LEGISLATION BY CONGRESS IS VERY APPROPRIATE IN THIS AREA.

I NEVER USED TO WATCH TELEVISION. NOW, I WATCH THE NEWS AND A FEW OTHER SHOWS, BECAUSE I HAVE HAD MY TV EQUIPPED WITH

AN AUDIO LOOP. CLOSED CAPTIONING WILL ALSO HELP, BUT ALL THESE TECHNICAL AIDS ARE EXPENSIVE - AND THE EXPENSE IS BORNE BY THE IMPAIRED PERSON. CONGRESSIONAL ACTION IN THIS AREA COULD PERMIT MORE USE OF AVAILABLE REMEDIAL AIDS AND RELIEVE THE FINANCIAL BURDEN FROM THOSE NOW USING SUCH AIDS.

YOU CAN SEE I WEAR A HEARING AID. IF I HAD BOUGHT THIS HEARING AID THIS MORNING, IT WOULD BE NO BETTER QUALITATIVELY THAN IF I HAD BOUGHT IT TEN YEARS AGO. SOME HEARING AID MANUFACTURERS PROTEST THAT THE 3.5 MILLION MARKET IS TOO SMALL TO AFFORD HIGH QUALITY RESEARCH AND DEVELOPMENT. OTHERS SAY THE INDUSTRY HAS REACHED ITS OUTER LIMITS IN TECHNOLOGY AND THAT ONLY A SWITCH COMPARABLE TO THAT OF WOOD TO PLASTIC WILL PERMIT NEW DEVELOPMENTS OF QUALITY. CONSUMERS PERCEIVE A DATED INSTRUMENT, INEXPENSIVELY PRODUCED AND SOLD AT CONSIDERABLE PROFIT AS THE REAL PROBLEM. BUT THE MAIN POINT IS, FOR WHATEVER REASON, THERE IS LITTLE MOVEMENT TOWARD IMPROVED QUALITY IN HEARING AIDS IN THE MOST TECHNOLOGICAL COUNTRY IN THE WORLD. WE ARE AT AN IMPASSE AND APPARENTLY ONLY THE GOVERNMENT CAN CHANGE THE SITUATION.

BUT, EVEN IF HEARING AIDS WERE WHAT THEY SHOULD BE, MANY PERSONS COULD NOT AFFORD THEM. THE LEAST EFFECTIVE ARE VERY EXPENSIVE. THE LARGEST GROUP OF POTENTIAL HEARING AID USERS ARE THE ELDERLY. THEY ARE ALSO OUR LARGEST GROUP OF POOR PEOPLE. FOR THEM, THERE IS NO ASSISTANCE AVAILABLE FROM ANYONE - YET.

I CANNOT HEAR THE PHONE RING, NOR THE DOORBELL, SMOKE ALARM OR ALARM CLOCK. I HAVE INVENTED AND HAVE A PROTOTYPE OF A DEVICE WHICH LETS ME FEEL ALL THESE THINGS. EVERYONE IN MY CIRCUMSTANCES THINKS ITS GREAT. BUT COST AND MARKET

FACTORS AGAIN WILL PROBABLY PREVENT IT FROM BEING USED BY THOSE WHO NEED IT MOST. IT SEEMS WE MUST ONCE MORE TURN TO THE GOVERNMENT FOR PROGRESS.

BUT THERE IS AN AREA OF EVEN GREATER IMPORTANCE. USE OF TECHNOLOGICAL ADVANCES IS OF LITTLE VALUE UNLESS PEOPLE'S ATTITUDES AND PERCEPTIONS CAN BE DEVELOPED TO A POINT OF ACCEPTANCE OF THE HUMAN WORTH AND DIGNITY OF INDIVIDUALS WHO HAPPEN TO SUFFER FROM HEARING LOSS. THIS DEVELOPMENT OF ATTITUDE IS NECESSARY AMONG BOTH HEARING IMPAIRED AND HEARING PEOPLE. TOO MANY CONTINUE TO VIEW HEARING LOSS AS SIGNS OF MENTAL AND/OR PHYSICAL INCOMPETENCE. IGNORANCE ABOUT WHAT HEARING LOSS IS AND IS NOT, IS PROFOUND. I HAVE RECENTLY ORGANIZED AN EDUCATIONAL ORGANIZATION CALLED SELF HELP FOR HARD OF HEARING PEOPLE, INCORPORATED, (SHHH). WE DO NOT ANTICIPATE GOVERNMENT SUPPORT FOR OUR ORGANIZATION, BUT WE DO EXPECT GOVERNMENT PARTICIPATION IN THE MASSIVE WAR ON IGNORANCE IN THIS FIELD WHICH AFFECTS MORE AMERICANS THAN ANY MAJOR DISEASE. GOVERNMENT'S PERFORMANCE IN THIS AREA IS SPOTTY. IT NEEDS TO BE DEEPENED. SHHH WILL BE EDUCATING THOSE IT CAN ABOUT THE NATURE, CAUSE, COMPLICATIONS AND REMEDIAL AIDS TO HEARING LOSS. WE WILL INSTRUCT OUR MEMBERS ON DETECTION, MANAGEMENT AND POSSIBLE PREVENTION OF HEARING LOSS. BUT WE CAN ONLY REACH A SMALL AUDIENCE COMPARED TO GOVERNMENT. IF CONGRESS EMBARKED UPON A WIDE DISSEMINATION PROGRAM OF EDUCATIONAL MATERIALS IN THOSE CATEGORIES IT COULD PAY FOR ITSELF IN REDUCED COSTS IN THE MEDICAL HEALTH FIELD. THIS INFORMATION HAS TO GET TO THE PEOPLE CONCERNED. WALTER LIPPMANN USED TO SAY THAT PROVIDING INDIVIDUALS WITH INFORMATION ON A GIVEN SUBJECT ENLARGES HIS OR HER ENVIRONMENT AND USUALLY the individual reacts favorably to that expanded environment. Only the government can do this on a large scale.

Finally, the need for research is great. The ear mold I am wearing is imperfect enough to diminish the utility of my hearing aid and to cause me discomfort. Listen. (Turn aid to full volume with resultant feedback.) I believe we have sufficient ingenuity to produce an ear mold which fills all the cavities of the ear. But it probably will not be done commercially.

The National Institute of Neurological and Communicative Disorders and Stroke (NINCDS) has an extremely broad mission. Unless special attention is given to communicative disorder problems in basic research there is little hope of significant breakthroughs in the prevention and alleviation of deafness. And if such research as NINCDS now carries out on the ORGAN ~~origin~~ of hearing and the auditory nerve is not continued and developed further, hereditary deafness is unlikely to be understood and prevented. But budget, space and other problems persist. R Within the Rehabilitation Services Administration, the Deafness and Communicative Disorders Office has responsibility for working on behalf of the hearing impaired. Almost a year and a half ago I visited DCDO and volunteered to work free as an intern to learn what that office was doing for the hard of hearing. I was told DCDO does nothing for the hard of hearing. I then volunteered to work free as an intern to devise programs DCDO should have for the hard of hearing. They didn't want any. That experience was a prime mover in my founding Self Help for Hard of Hearing People, Incorporated. I want to find our people who have hearing

LOSS. I WANT TO INVOLVE THEM IN ACTIVITIES WHICH HELP BRING THEM ALIVE AGAIN. I WANT TO HELP DEVELOP PUBLIC AND PROFESSIONAL ACCEPTANCE OF THEIR NEEDS AND VALUES. THEN, I AM CONVINCED, THEY WILL SEEK ALTERNATE COMMUNICATION SKILLS COMFORTABLE AND SUITABLE TO THEIR NEEDS.

WE HEARING IMPAIRED HAVE ALLOWED OUR ADVERSE IMAGE TO ENDURE. IT IS TIME THAT IS CHANGED.

NOW, MR. CHAIRMAN, WE WISH TO PLEAD OUR OWN CAUSE. TOO OFTEN HAVE OTHERS SPOKEN FOR US AND FOR TOO LONG. WE WILL HELP EACH OTHER AND OURSELVES. WHAT WE SEEK FROM HEARING PEOPLE IS THEIR UNDERSTANDING THAT OUR SIMILARITIES TO THEM ARE FAR GREATER THAN OUR DIFFERENCES; THAT WE NEED RELATIONSHIPS ON THE NORMAL HUMAN LEVEL - NEITHER ABOVE IT AS SUPER ACHIEVERS NOR BELOW IT AS ONES WHO CANNOT COPE; THAT THE NEED IS TO GO BEYOND THE DISABILITY TO THE PERSON AND ACCEPT PEOPLE AS THEY ARE - FOR INDEED, WE ALL HAVE PROBLEMS.

AND SO, WHILE WE TRY TO HELP OURSELVES, WE LOOK TO THE GOVERNMENT TO RECTIFY EXISTING INEQUITIES OF ACCESS, COST AND INADEQUATE PUBLIC INFORMATION IN THE FIELD OF HEARING LOSS. FOR, ALTHOUGH WE CANNOT OVERCOME OUR DISABILITIES, TOGETHER WE CAN OVERCOME THEIR HANDICAPPING EFFECTS.

Senator **Schweiker**. Mr. Carl Kirchner, associate director of Kendall Demonstration Elementary School, is testifying on behalf of the Convention of American Instructors of the Deaf. CAID includes more than 3,500 professionals involved in the education of hearing-impaired students.

Let me say that, unfortunately, we are really running way behind schedule so would you put your whole statement in the record, and then maybe summarize, in 4 or 5 minutes, your testimony? Otherwise, we just will not get through all the witnesses. I apologize for that, but that is what we will have to do.

Could you summarize your statement?

Mr. **Kirchner**. I would be happy to do so.

Senator **Schweiker**. OK.

STATEMENT OF CARL KIRCHNER, DIRECTOR OF INSTRUCTION, KENDALL DEMONSTRATION ELEMENTARY SCHOOL, REPRESENTING THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF, WASHINGTON, D.C.

Mr. **Kirchner**. The Convention of American Instructors of the Deaf is very grateful to have the opportunity to present both written and oral testimony to the subcommittee.

Our focus, of course, is on the education of hearing-impaired children. We are not proposing that Congress should attempt to resolve professional issues. However, we do believe that clarification of a number of matters relating to the hearing impaired could reasonably be achieved through administrative policy statements, modification in language of regulations, or, should it be viewed as necessary, changes in language requirements of the law.

We understand the fundamental precepts of the law, Public Law 94-142, to be the assurance of appropriate education of all handicapped students, including the hearing-impaired. This assurance is addressed by each LEA through the SEA plan. The law also addresses the need for States to maintain a continuum of educational service options, presumably as a means of assuring the availability of a delivery system which can respond to the needs of the individual child.

The law assumes that unless there is a compelling requirement to the contrary, each handicapped child will be educated with his nonhandicapped peers.

Mr. Chairman, there is currently developing an interplay of special education philosophy and interpretation of the law which, for many hearing-impaired children, can and will frustrate the intent of the appropriate education description within the law.

This can result from the interpretation of the least restrictive placement provision indicating that mainstreaming is both a moral and legal imperative which supersedes the right to an appropriate education. Our concern is that we address the issue of appropriate education for hearing-impaired children.

Historically, in too many cases, the educational requirements of hard-of-hearing students and profoundly deaf students have not been sufficiently differentiated. Proper implementation of the intent of Public Law 92-142 would appear to adequately resolve this problem.

To do this, qualified personnel are critical to the implementation of the intent of the law. At present, the question of qualification of personnel involved in programing for handicapped children is a matter left to the States.

If an appropriate education is to be assured to all hearing-impaired students, we believe it essential that personnel qualified through experience and training should be involved throughout the process of diagnosis, assessment of educational needs, planning of the individual programs, and implementation of those programs, including support and related services; and, in addition, in the due process procedures.

Unsolicited communication and unstructured contacts in the field of education of the hearing-impaired suggests to us that there are numerous instances in which critical decisions are being made by inappropriately qualified personnel. To some extent, this problem is amplified by the perceived imperative to provide educational services at the local level, irrespective of the capability to provide an adequate program.

Since the precise nature and extent of this problem are not defined in the literature or through specific data gathering techniques, we urge the expansion of the monitoring and evaluation role of the Bureau of Education for the handicapped to insure quality of programing as reflected in the qualifications of personnel involved in decisionmaking and service delivery to the hearing impaired. We suggest this as one means of factfinding which could lead to definition of requirements for policy guidelines and for funding of personnel development efforts.

Our concern is educational and programing decisions involving the hearing-impaired students, and that these be made on the basis of the child's needs as determined by such qualified personnel, not on the basis of preconceived philosophies of educational service delivery or the specific range of resources which are immediately available.

Since there are a variety of factors which are inhibiting provision of appropriate services to the hearing impaired, both the hard-of-hearing and the deaf, the area of qualified personnel is of critical concern. By developing programs to provide supplementary training for school psychologists so that they could effectively evaluate hearing-impaired students is a definite need.

Appropriate supplementary training for social workers and other mental health personnel could make existing manpower resources accessible to the hearing-impaired population. Models for providing such supplementary training, and their dissemination, might well be supported by Congress.

In the instruction area, there is also an apparent need for model programs for the training and retraining of teachers and support personnel to work effectively with special groups of hearing-impaired students. In particular, we are concerned here for personnel who can work with multiple handicapped students and with hearing-impaired students from homes which use other languages and represent other cultures. There is a rapid expansion of the number of students from Spanish-speaking homes in our educational programs.

The promise of educational technology as a means of improving instruction for hearing-impaired students has not been fully realized. Results in this area may have been enhanced by more thoughtful, long-range planning and assessment of the feasibility of various options. Continuing effort and dollars may be required for realizing results in the area of educational and communication technology.

The long-range efforts of the Bureau for Education of the Handicapped in the area of captioned films for the deaf and the development of closed caption television technology are good examples of the persistence which can benefit thousands of hearing-impaired persons.

Microcomputer technology holds promise for enhancing both the educational and communication environment for hearing-impaired persons. The Bureau of Education for the Handicapped has exploration and development activities underway in most of these areas. We believe these efforts should be continued and expanded, with the assurance that their efforts will be of a sustained nature, focused on persistent problems of communication and instruction for hearing-impaired students. These technologies can bring together education and training within as well as beyond the structured learning environment.

Congress has been very helpful in establishing the legislative framework for delivery of appropriate services to hearing-impaired students. The multiple and severely handicapped, hearing-impaired students are a group of special interest. Not only is there a need for training of personnel to work with these individuals, but there may also be a need for special approaches in the delivery of services, especially for individuals who, due to age or other factors, can no longer be appropriately served by programs in their home area.

For such students, it may well be that the most critical handicap is not hearing impairment, but a physical, mental or emotional disability. Such students will not only need services representing a broad interdisciplinary orientation, but will also need occupational-vocational training, geared to help them live productive lives.

Continuity and continuance of existing federally supported programs for both secondary education and vocational training should be assured. These programs should be encouraged through additional funding to develop and export service delivery models which are designed to meet the needs of an ever-increasing population of multiple-handicapped students.

While many multiple handicapped individuals can be served in existing programs, there may well be a need for programs of a halfway house nature which could be implemented in many metropolitan areas.

In general, our major focus is to look at what is happening now with Public Law 94-142, and to seek assurance that quality educational programing for all children be assured.

Senator SCHWEIKER. Well, let me say first that you have a very good statement, and I think you summarized it well, too. I want to assure you that I share your concern over the mainstreaming of deaf or other hearing-impaired children without proper teacher training.

Are there any particular States which you see that are leaders in providing adequate training in this area that you would cite as prototypes that other States ought to be emulating?

Mr. KIRCHNER. In terms of teacher preparation programs, or in terms of just modeling different types of programs for hearing-impaired students at various levels?

Senator SCHWEIKER. Well, let us say both. I do mean teacher training programs, but I also would like to know the other answer too.

Mr. KIRCHNER. Our main concern at this point is to further the development of model teacher training programs that consider the broad range of the multiple handicapped student, from birth to beyond the school age level as well as instructional prototype models which should be continued beyond 21 years of age due to the complexity of hearing loss and linguistic development.

We are concerned about programs that begin to address the whole child from infancy through adulthood.

Senator SCHWEIKER. We have a few more questions, but because of time, I will put them in the record. Thank you very much for being here.

[The prepared statement of Mr. Kirchner follows:]

STATEMENT

Respectfully Submitted

to

The Subcommittee on The Handicapped

of the

Senate Committee on Labor and Public Welfare

on

Programs and Technology for the Hearing Impaired

In Behalf of

The Convention of American Instructors of the Deaf

Washington, D.C.

February 6, 1980

TESTIMONY ON BEHALF OF THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF

NATIONAL OFFICE
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Mr. Chairman, I am Carl Kirchner representing the Convention of American Instructors of the Deaf. Our organization includes more than 3,500 professionals directly involved in the education of hearing-impaired students. We understand that it is the interest of the Subcommittee on the Handicapped to hear comments on the efficacy of programs and technology for the hearing impaired and to identify gaps in service which might be addressed in some appropriate manner by the Committee and the Congress. Our comments and recommendations are addressed more to improvements within areas of existing legislative and program authority than to new departures. Furthermore, our comments are generally focused on matters of most interest to us as educators, in the belief that other advocates will address critical issues outside of this framework.

Our comments address the following areas:

(a) P.L. 94-142
(b) Improvement of Instruction for Hearing-Impaired Students
(c) Mental Health Services
(d) Multi-Handicapped Hearing-Impaired Students
(e) Accessibility

PUBLIC LAW 94-142

The Education for All Handicapped Children Act is a commendable legislative work which brings assurance of access to educational services to handicapped students, including deaf students, who in the past would have been shunted from one agency to another. It promises appropriate education, individualized planning for students based on their needs, and delivery of educational services in an environment which restricts the right of the child to education with his peers, only to the extent necessary. However, we would like to share with you a number of concerns and recommendations:

1. The fundamental precept of the law is the delivery of a free and appropriate education for handicapped children.

   The impact of deafness/severe hearing impairment is usually pervasive in the life of a child so disadvantaged.

   Placement of a severely hearing-impaired child in a classroom with a teacher untrained in the methods of communication on which the child is dependent, in circumstances where social interaction is severely inhibited by communication barriers, and where there is only minimal access to professional support services such as consultant teachers and knowledgeable supervisors, can hardly be expected to result in an appropriate education.

   Placement of a deaf or severely hearing-impaired child in an educational setting in which communication barriers effectively isolate the child from the social and cultural milieu of significant association with his peers and role models, can effectively divorce the hearing-impaired child from essential aspects of an appropriate education.

Placement of a first-grade aged severely hearing-impaired student in a regular classroom with an untrained teacher, with speech therapy provided twice a week for twenty minutes by an itinerant resource specialist, is indicative of inappropriate education. Yet we know that these conditions exsit. That is, to some extent, an unfortunate side effect of P.L. 94-142 which hopefully should be eliminated.

It is surely not the intent of the law to isolate an individual handicapped child from critical aspects of an appropriate education. Yet this is a potential, already realized in numerous instances, largely as a result of misinterpretation of another precept of the law, "least restrictive environment."

> We believe, therefore, that it is essential for the sake of numerous severely hearing-impaired students and other handicapped students, that administrative policy guidelines, the regulations for P.L. 94-142, and possibly the language of the law itself, clarify that the fundamental intent of the law is to assure an appropriate education, and that this ideal must not be sacrificed for the sake of philosophical interpretation of the term "least restrictive environment."

2. The law requires that individualized educational plans be developed for each handicapped child.

Neither the law nor the regulations require that the individualized plans be developed without regard to the educational services which the education agency is capable of providing. Such a requirement should exist. The law is weak in relation to expectations for the qualifications of the personnel involved in the educational planning and service delivery, leaving the question of qualifications to the states. Given that there is a large variation in standards from state to state, and some states do not have standards for some categories of personnel essential to planning and delivery of services for the deaf (even teachers), this may well operate to the educational disadvantage of many hearing-impaired students. In general, a speech therapist or audiologist is not qualified by experience or training to plan or deliver educational services to a severely hearing-impaired student.

> We believe, therefore, that the monitoring program of the Bureau of Education for the Handicapped, relative to compliance with requirements of P.L. 94-142, should be supplemented with efforts to ascertain the extent to which the personnel involved in planning and delivery of individualized educational plans are qualified in terms of experience and training, and that depending on the true nature and extent of this problem, policy guidelines, or if necessary, regulations, should be established to assure that qualified personnel are involved. Surely this is a critical element in the delivery of an appropriate education for hearing-impaired students, and other handicapped students as well.

3. The law requires educational planning based on the results of assessment with valid instruments.

The state of the art in assessment is questionable in terms of the ideal of basing educational programming on valid assessment of learning needs of deaf children. Few assessment instruments relevant to curricular instruction of severely hearing-impaired/language-impaired students are of demonstrated validity. In many areas of the country, competent professionals are not available who can reliably administer and interpret accepted assessment instruments when applied to severely hearing-impaired/language-impaired students.

> We believe, therefore, that a specific analysis is needed of the manpower requirements implied in relation to educational assessment of hearing-impaired students, and that appropriate manpower development programs should be funded as indicated by that analysis.
>
> We believe that priority should be placed on funding validation studies of selected educational assessment instruments which are available, and upon a determination of those areas in which new techniques/instruments are needed.

4. The law provides that states should assure the maintenance of a continuum of placement options.

This is a prudent concept. Only with this provision can a handicapped child and his parents be assured of placement in a learning environment which is responsive to the individually defined needs of the child. We understand the law to tacitly recognize that segregated classes in public schools and special schools, including residential schools, have an appropriate role in the system for delivery of educational services for handicapped students, and that they may be required in order to meet the needs of some handicapped students.

Zealous advocacy of what we perceive to be a misinterpretation of the concepts of "least restrictive environment" can easily lead to a weakening of existing systems for delivery of appropriate education. In some states conventional philosophy, if not actual policy, exists which operates to prevent the placement of severely hearing impaired in the so-called "more restrictive" setting.

The protection for the individual child in such cases should reside in the due process provisions of the law and the due process machinery which each state is required to establish. Yet these same protective systems can be tainted by imprudent bias. It is reported that in some states (Pennsylvania, for example) no parent of a deaf child, who has sought placement on the so-called "more restrictive" placement options (residential schools) through the established hearing process, has been successful.

There is no mechanism for a qualified teacher of the deaf to exercise an advocacy for the child, once a placement decision has been made which he believes inappropriate. If a decision, supported by well-meaning, but ill-advised parents, and structured by a committee of well-meaning but unqualified professionals, is not in the best interests of the child, who else can be the advocate for the child -- and what recourse is available?

The law has language providing for the improvement of instruction in residential schools, but the regulations for the law are silent on this issue. No funds under the Education for All Handicapped Children Act are allocated to this concern.

> We believe, therefore, that administrative policy, the language of the regulations, and possibly the language of the law, as well as funding, if necessary, be strengthened to realize the concept and reality of a continuum of educational service options, making it possible for each option to play a continuing important role in the delivery of appropriate educational services to those handicapped students whose educational needs cannot be met appropriately in "less restrictive environments."
>
> Educational agencies should not be "inadvertently" encouraged by the law, regulations, or federal policy to place a severely hearing-impaired child in an educational program which does not meet his needs. They should not be encouraged to plan a program for a child within the constraints of the services which are available, rather than developing or selecting a program which meets the needs that are defined independent of those constraints.
>
> Finally, the successful parental pursuit of appropriate placement and education should not be limited only to parents with the means to employ professional advocacy, including legal counsel. It is suggested that if the educational agency were held responsible for the costs of parent pursuit of the rights of their child, there would be a rapid diminution in the extent of litigation regarding placement and programming issues.

5. The lack of clarity of expectations for IEPs may inadvertently create unnecessary administrative workload in certain programs.

The law requires the development of a written individualized educational plan. For the mildly handicapped student in a local district, this may appropriately mean the specification of the short-term and long-term goals, and related documentation requirements, in relation to a restricted set of service needs such as speech therapy, physical therapy, or other service related to the defined special education needs of the individual child. In such instances where the student can successfully be involved in the general curriculum established for all students, there is presumably no need to develop detailed documentation. In such instances, the documentation of the individual special education plan represents a reasonable and important function.

The above situation can be contrasted with that of a special school in which the entire educational program is considered a special education service. If in such a situation it is interpreted that the written individualized educational plan must reflect all aspects of the student's education (including long and short-range goals for not only those extra services the student needs, but the full range of curriculum), then the level of effort and the communication requirements, and the sheer time required for paperwork, are multiplied greatly. This multiplication of time and effort is viewed by many teachers as not only tedious, but often counterproductive.

> We believe, therefore, that clarification of the intent of the law in such situations, possibly at the level of administrative policy statements by the BEH, would be helpful. Hopefully, that intent would be at the level of those special services above and beyond those services which are routinely provided to every student within that particular school setting. Hopefully, some compromise understanding could exist which would not result in thirty-page IEPs, such as are reported in some schools.

IMPROVEMENT OF INSTRUCTION FOR HEARING-IMPAIRED STUDENTS

Severely hearing-impaired persons have been educated in some organized manner for more than 150 years. Given this history and our committment to hearing-impaired students, it is painful to admit that the product of the educational system for severely hearing-impaired students, leaves much to be desired. To be able to say that our results are as good or better than in other nations, or that increasing proportions of students are more severely handicapped (or multiply-handicapped) than in the past, is little consolation to the hearing-impaired student. There are many who cannot competently communicate in writen or oral English, or who lack the requisite life skills for effective independent living in our society . . . We would like to share the following concerns and suggestions:

1. There is a lack of priority within the educational system on the type of educational research which can result in improvement in learning and instruction. Much of the research in the area of deafness/hearing impairment appears to be focused on psychophysical variables. Little systematic, and almost no programmatic research, which impacts on learning/instruction, has been supported. Notwithstanding the widely perceived inadequacies of educational research in education, some priority should be established for programmatic research on instructional/learning variables with the hope that studies may build upon one another so that ultimately major educational issues can be resolved and all hearing-impaired students can be effectively educated.

    The new Department of Education and the institute for research on the handicapped might well be charged, using broad input from the community of education of the hearing impaired and the hearing impaired themselves, to devise a long-term programmatic research plan directed to critical instructional and learning issues which could guide the funding of federally supported/encouraged research in education of the hearing impaired.

2. To a considerable extent, the promise of educational technology as a means of improving education of the hearing impaired has not been realized. Results in this area may well have been enhanced by more thoughtful long-range planning, more careful assessment of feasibility of various options, and more sustained focus of effort and dollars on strategies which relate to solution of persistent educational problems of the hearing impaired. Sustained attention and support in the development of technology, responsive to a few critical problems, is likely to have more payoff than diffused and scattered efforts to respond to a broad variety of technology needs.

The long-range efforts of the Bureau of Education for the Handicapped in the area of Captioned Films for the Deaf, and the development of closed caption television technology are good examples of the persistence and focus of effort which can benefit thousands of hearing-impaired persons.

> Computer-managed instruction for hearing-impaired students may well be an area which deserves focused and sustained attention by the federal government. The theoretical benefits of the marriage of computer-managed instruction with videodisc technology could, (given demonstrated feasibility, a long-range plan, and sustained support and encouragement), be a means of radically enhancing the results of instruction in language and reading for severely hearing-impaired students. A blending of these technologies with the technology for closed captioning might well permit the development of software useful with other special populations of students, thereby establishing the broad market requirements needed to assure the economic viability of the product.

3. It is generally accepted in the field of education of the deaf that early education and supportive services for hearing-impaired students can be critical to the later educational and communication achievement of the student. P.L. 94-142 encourages early educational intervention through

its incentive program, but does not require educational services below age three. Few states require services for children below age three. Traditionally, most educationally relevant services providing for very young hearing-impaired children have been funded through charitable sources such as United Fund, the Easter Seal programs, and similar means.

> We recognize that in establishing legislative and funding requirements, the Congress must exercise a high sense of priority. Not everything that is desirable can be done. We suggest, however, that committees may well consider calling for expert testimony of the efficacy of early education programs for handicapped students, with a view to determining those types of handicapped students for which the states should be required to develop and provide services from the time of earliest identification -- from birth upward.

4. Quality of personnel involved in the educational program for hearing-impaired students is a critical variable.

> In our opinion there are several areas of personnel development which should receive special priority:
>
> (a) personnel retraining to qualify already competent educational supervisory personnel with the knowledge and skills required to supervise instruction for hearing-impaired students
>
> (b) personnel retraining to qualify ancillary personnel such as school psychologists, to work with severely hearing-impaired students
>
> (c) personnel retraining to prepare bilingual Spanish/English teachers to work directly with hearing-impaired students
>
> (d) personnel retraining to qualify certified teachers of the hearing-impaired to meet the instructional/learning needs of multi-handicapped hearing-impaired students

MENTAL HEALTH SERVICES

The prevalence of emotional and behavioral problems among deaf students is three to five times as much as that within the normally hearing population of students. In ordinary classrooms for the deaf, it can be expected, on the average, that one or more students will have significant need for mental health services. These emotional and behavioral problems can be a significant inhibition to effective learning. In addition, teachers who work with severely and multiply-handicapped students tend to experience considerable stress, which can diminish their own effectiveness and make them candidates for mental health services as well. Further, parents of newly diagnosed handicapped students must resolve undue guilt feelings and grow into an acceptance of their child as he really is.

Mental health services, and knowledgeable professional mental health personnel who can assist students, teachers, and parents, are not broadly available. Frequently, a competent mental health professional can effectively assist deaf students with only a modest level of orientation, training, and development of communication skills. There are few programs in the United States which concern themselves with training mental health professionals to serve deaf persons.

> We believe that additional effort is needed to provide supplementary training to interested psychologists, psychiatrists, counselors, and social workers, to enable them to handle mental health problems of deaf and hearing-impaired students, and to provide supportive services to teachers and parents of these students.
>
> We believe that in addition to additional support in the educational context, the Congress should consider calling for expert testimony which could establish the nature and extent of need for specific authorization and appropriation for programs which could deliver mental health services to the hearing-impaired population as a whole, including both children and adults.

HEARING-IMPAIRED INDIVIDUALS WHO ARE MULTI-HANDICAPPED

Since the 1940's the characteristics of the hearing-impaired student population have changed dramatically. Today's students tend to be more severely hearing-impaired, and there is a larger incidence of multi-handicapped severely hearing-impaired students. At the same time there are numbers of less severely hearing-impaired students with additional handicaps for whom the combined effect of two or more handicapping conditions present particular problems. The point here is that there are multi-handicapped individuals who can successfully participate in postsecondary education and training opportunities, and others whose academic potential and vocational training potential is severely limited.

Multi-handicapped hearing-impaired students often have difficulty in finding appropriate educational placement due to the fact that many educational and training programs are not yet prepared in terms of program and staff to accommodate the total need of the individual. There is reason to think that without the appropriate level of preparation, there is a tendency to have a "band-aid" approach in which early training and services are not sufficiently related to subsequent training and services.

The legislative structure appears to be in place to support coherent programming for such students which can result in accomplishment of life skills and vocational and educational goals. Conceptually, the problem is how to make the pieces, at the level of programming, fit together for maximum benefit.

> We believe, therefore, that continuity for currently supported postsecondary programs should be assured, and that these programs should also have the resources for program development to meet the needs of increased numbers and proportions of multi-handicapped students which will reach these programs now and in the near future.

We believe that there is a specific need for development of program models which can develop and demonstrate an integration of services within the context of a program of education and training, across all student age levels, which is directed toward accomplishment of independent living skills, economic self-sufficiency, and achievement of individual (personal) educational goals. Such models should be replicable in, at least, any metropolitan area.

We believe there is a specific need to increase the quality and extent of teacher education programs preparing teachers to work with multi-handicapped students. This might be accomplished by identifying those preparation programs which represent excellence in this area and facilitating the diffusion of exemplary practices to other preparation programs.

We believe that severely multi-handicapped hearing-impaired individuals may well need a "half-way house" service approach, especially if such facilities were located in proximity to vocational training and sheltered workshop programs.

We believe there is a specific need to train paraprofessional personnel to provide supportive services for multi-handicapped severely hearing-impaired individuals.

ACCESSIBILITY

Sections 503 and 504 of the Rehabilitation Act have opened the potential for barrier-free environments for handicapped persons. This concept has been extended to consideration of communication barriers, which represent a significant problem for severely hearing-impaired individuals. New technology is and will become available to assist hearing-impaired persons overcome the communication barriers. Closed-caption decoders, increased availability of of telecommunications devices (TTDs), and FCC consideration of special channels for radio-based signalling devices useable by the deaf and the blind represent movements in a good direction. Videodisc technology and microcomputer technology may well represent, in the not too distant future, feasible means through which communications accessibility for the hearing impaired can be enhanced.

Although the developing technology represents new opportunity for the hearing impaired, it will also result in added costs frequently, costs which the average citizen would not incur. There are several areas in which these costs might and should be ameliorated for hearing-impaired persons.

> We believe, therefore, there should be a nationally-coordinated policy of telephone rate reduction for long-distance telephone rates for hearing-impaired persons to compensate for the higher costs of slower communication.
>
> We believe that a reasonable tax policy would be one in which hearing-impaired persons would receive either tax deductions or tax credits for any device process which primarily assists them in communication.

Mr. Chairman, we thank you for the attention of the Subcommittee to the concerns we have expressed and trust that you will also give thoughtful consideration to the suggestions and recommendations which we have made. At your request, we would be happy to supply additional information supportive of recommendations which you may find of particular interest.

Senator SCHWEIKER. Our next witness is a panel: Dr. Gene Del Polito, director of the audiology program, American Speech-Language-Hearing Association, Rockville, Md.; Dr. Morgan Downey, director of governmental affairs, American Speech-Language-Hearing Association, Rockville, Md.; and Dr. Sara Conlon, executive director of the Alexander Graham Bell Association of the Deaf, Washington, D.C.

We welcome you all this morning. We are sorry about our time, and would ask you to put your complete statements in the record. Then each of you may have 3 or 5 minutes to summarize whatever main points that you would like to emphasize here this morning.

Dr. Del Polito, I guess we will start with you.

STATEMENT OF GENE A. DEL POLITO, PH. D., DIRECTOR, AUDIOLOGY PROGRAM, AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION, ROCKVILLE, MD.; MORGAN DOWNEY, DIRECTOR OF GOVERNMENTAL AFFAIRS, AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION, ROCKVILLE, MD.; AND SARA CONLON, EXECUTIVE DIRECTOR, ALEXANDER GRAHAM BELL ASSOCIATION OF THE DEAF, WASHINGTON, D.C., A PANEL

Dr. DEL POLITO. Thank you. I am the director of the audiology program of the American Speech-Language-Hearing Association, and on behalf of my organization, I want to thank you for the opportunity to address you on behalf of our members and the millions of hearing-impaired persons that our members serve.

In the written comments we submitted to the subcommittee, we discussed several areas of concern we had relative to the needs of hard-of-hearing persons, such as the communication barriers that prevent access to essential public services, the lack of emergency preparedness plans that address the special needs of the hearing-impaired, the still-existing communication barriers that prevent full participation in public life, the need for greater support for public information programs regarding hearing and hearing problems, the need for effective regulation to prevent needless hearing loss, the need for public support for hearing rehabilitation research, and problems related to hearing aid purchases for older Americans and those who must live on public assistance.

Unfortunately, time will not allow us to explore in detail all of the issues raised in our written comments. There is one matter on which I would like to focus my comments, and it pertains to the Rehabilitation Service Administration's activities relative to the needs of hard-of-hearing Americans.

When it comes to adults, the Rehabilitation Services Administration is the agency that is primarily responsible to attend to the rehabilitative needs of handicapped Americans, including the hard of hearing. RSA traditionally has been expected to provide leadership in planning, developing, implementing and evaluating the nation's rehabilitation programs for all hearing-impaired persons through its deafness and communicative disorders program.

The Deafness and Communicative Disorders Office traditionally has been charged with responsibility within this area, but the resources allocated by the administration to this office have been very limited. The Deafness and Communicative Disorders Office, or

DCDO for short, has been severely understaffed for a number of years.

For instance, there currently is no one on the DCDO staff who possesses professional expertise in the areas of speech language impairment or hearing impairment other than deafness. The limited resources this office has been given have been allocated to programs for the deaf will make up only 10 percent of the entire population who are hearing-impaired.

While deafness is certainly one of the most profound of all communicative handicaps, and while the deaf have long been among the most underserved of all handicapped persons, the comprehensive rehabilitative needs of hard-of-hearing Americans so far have been left unaddressed.

In part, this dilemma is caused by administrative and political circumstances that have left the deafness and communicative disorders program with only meager support. For instance, unlike the programs for the blind and the developmentally disabled, the program for the communicatively handicapped is without a legislative base. So the program receives no funds dedicated by Congress to address the rehabilitative needs of its constituents.

The office exists only by administrative authority. It has no program budget and no discretionary funds. In fact, of all of the programs dedicated to persons with specific disabilities, the program for communicatively-handicapped is the most susceptible to the precariously changing currents in the American political stream.

It gets all too little funding when economic and political conditions are good, but it gets even less when times are bad. It is denied staff, as are other programs during hiring freezes, but it remains woefully understaffed even when the freezes are lifted.

As the Commissioner of RSA already has said, late last year he received a report from a task force that was charged to examine and evaluate the current RSA communicative disorders program and to recommend suggestions for change.

In its report, the task force recommended the adoption and implementation of a proposed program development plan designed to improve significantly the scope and quality of programs and services provided to all communicatively handicapped persons, including the hard of hearing.

While the program development plan can be implemented at least in part through the Commissioner's administrative authority, its ultimate success requires congressional support. Without the necessary legislative and fiscal support, the leadership we hope to see RSA provide in coordinating the planning, developing, implementing and evaluating of the Nation's rehabilitation programs for the hearing-impaired will continue not to be forthcoming.

For many hearing-impaired persons, the problems they face seem almost insurmountable. Our association stands ready to help you and your staff to explore whatever means are possible for making these problems less formidable. Thank you.

[The prepared statement of Dr. Del Polito follows:]

UNITED STATES OF AMERICA

BEFORE THE SUBCOMMITTEE ON THE HANDICAPPED

UNITED STATES SENATE

COMMENTS OF THE AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION CONCERNING PROBLEMS OF THE HARD OF HEARING

Submitted by:

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January 23, 1980

INTRODUCTION

· The American Speech-Language-Hearing Association (ASHA) appreciates the opportunity to address this Subcommittee on behalf of its members and the over 22 million communicatively handicapped persons ASHA members serve. The American Speech-Language-Hearing Association is a scientific and professional society founded in 1925 and currently consists of more than 33,000 audiologists, speech-language pathologists, and speech and hearing scientists. Association members are health and educational rehabilitation professionals concerned with the prevention of hearing, speech, and language disorders, and the identification, evaluation, and rehabilitation of individuals afflicted by such disorders. Association members render their services in such settings as hospital speech and hearing clinics and departments, free-standing outpatient speech and hearing clinics, outpatient rehabilitation facilities such as those administered by the National Easter Seal Society and the United Cerebral Palsy Association, private practice, Veterans Administration hospitals, Head Start programs, Department of Defense hospitals and clinics, and the public schools. The professional activities of ASHA members, especially audiologists, bring them in daily contact with hearing impaired people throughout the nation, and have afforded them a firsthand knowledge of the many communicative, educational, social, vocational, and emotional difficulties experienced by the hearing impaired.

A PRIMER ON HEARING AND HEARING LOSS

Language is what humans use to carry on the affairs of their society, and speech is the primary means by which humans communicate with language. The ability to develop and use speech for communication is one aspect that differentiates humans from lower forms of animal life. Humans are anatomically and physiologically predisposed to develop and use speech. In fact, given normal circumstances, young children develop oral language skills without any formal training. Speech helps people formulate their thoughts and provides them with a vehicle to express their thoughts to others. In a physical sense, speech is nothing more than sound -- sound which when heard is interpreted by the listener as having some meaning. The ability to hear sound, then, is the keystone for normal communicative development, and the ability to communicate forms the basis for normal educational, social, and emotional development.

People who suffer the loss of even a part of their hearing ability also lose a part of their ability to interact easily with others in their society. Not all hearing impairments are hearing handicaps, but those that are can exert a powerful influence over the degree to which one can enjoy the full benefits of social life. Children who suffer from hearing loss often experience delays in their educational and social growth with a resultant reduction in the alternative educational and vocational opportunities available to children with normal hearing. Even when hearing impairment only begins in later life, it still can reduce one's ability to enjoy the full scope of normal human social interaction. Over 16 million Americans have some degree of hearing impairment.

While simply knowing more about hearing impairment will not solve the social, educational, and vocational problems experienced by the hearing handicapped, greater knowledge about hearing problems can enhance society's sensitivity to the needs of those who learn to live with America's most pervasive and hidden physical handicap.

The Structure and Function of the Ear

The ear is a complex sensory system — one that provides people with most of the information they obtain each day. The auditory system begins with the outer ear structure called the auricle, which protrudes from the side of the head, and the external auditory canal. The outer ear receives and collects sound and conducts it toward the tympanic membrane (or eardrum). The tympanic membrane is connected to a chain of three small bones (or ossicles) in the middle ear. As the tympanic membrane vibrates in response to incoming sound, it converts the sound energy into mechanical energy which is transmitted by the ossicles to an opening in the inner ear.

The inner ear is a fluid filled bony structure that contains a fluid filled membranous sac in a division of the inner ear called the cochlea. The energy conducted by the ossicles of the middle ear is transmitted to the fluid in the inner ear which exerts mechanical pressure on the membranous sac inside the cochlea. When the cochlear sac responds to this stimulation, it exerts pressure on the sense organ contained within the sac. This sense organ, called the Organ of Corti, responds to this mechanical pressure by triggering a neural signal that travels along the nerve fibers that connect the inner ear to the central auditory nervous centers. These nerve fibers, collectively called the auditory nerve or the eighth cranial nerve, respond in accordance with the frequency, intensity, and temporal characteristics of the stimulating sound.

The nerve signals from the auditory nerve are transmitted to auditory nerve fibers within the central auditory system. Here auditory signals are compared, correlated, and further analyzed to provide a complex flow of neural information to the auditory reception areas of the brain. Once the brain receives the auditory neural input, it further extracts information and stimulates other brain centers to give rise to the perception and recognition to the signal we call *speech*.

Types of Hearing Impairment

Hearing impairment can result from disruption of normal functioning anywhere along the auditory system. When problems affect outer or middle ear functioning, they produce what is called a *conductive hearing impairment*. That is, the hearing problem is the result of a disruption of the transmission of sound by the ear mechanisms that conduct sound energy to the neural sensory centers. If the function of the sensory centers inside the cochlear sac or the neural structures within the eighth nerve are disrupted, the result would be a *sensorineural hearing impairment*. If disruption occurs along the central auditory pathways that lead to the brain or in the auditory centers within the brain, the problem is called a *central auditory impairment* or *central auditory dysfunction*.

Conductive hearing impairment. Conductive hearing impairments usually are the result of a condition of the ear that often can be medically corrected. The hearing loss that results produces an overall attenuation of sound across part or all of the hearing range. When an individual has a conductive hearing loss, speech sounds unclear because sound is not loud enough to provide all the information needed for understanding. With this kind of hearing loss, the sense organ of hearing and its associated neural structures are not affected. Consequently, when the causes of many conductive hearing losses are treated and corrected, it is not uncommon for the listener again to experience normal hearing. Anyone in any age group can acquire a conductive hearing impairment for any of a variety of reasons (e.g., impacted earwax, a reptured or diseased eardrum, disarticulation of the ossicles, fixation of the ossicles, sterile or infected fluid in the middle ear, and others).

Conductive hearing loss can be permanent, such as when it results from chronic ear disease or it can be temporary, such as when it results from a transient cold or allergy. Besides often requiring medical attention, conductive hearing losses create impediments to normal human communication. For instance, young children are especially susceptible to conditions of the middle ear that result in conductive hearing impairment. As long as the precipitating medical conditions are present (and sometimes even when they disappear), the affected child may retain a significant hearing impairment. As long as the hearing loss remains, the child's ability to use speech as a means of communication can be drastically reduced. In a very young child, prolonged conductive hearing loss can severely delay normal speech and language development. In preschool and school age children, conductive hearing loss also can affect normal educational and social development and may result in academic and behavioral problems at school and home.

While there are no conclusive figures on the incidence of conductive hearing loss, the incidence of this kind of hearing problem is much greater in children than in adults. About one-fourth of all hearing impairments may be, in whole or in part, conductive in nature. For children three years of age and below, the incidence of transient conditions affecting the middle ear with concomitant conductive hearing loss may be as high as 30%. Among Downs Syndrome and cleft palate youngsters, the incidence may be as high as 50%-70%. The incidence of conductive hearing problems is also much higher for American Indian and Eskimo children than for white youngsters.

Sensorineural hearing impairment. Unlike conductive hearing loss, sensorineural hearing loss usually is not medically correctable. Sensorineural hearing loss either stays the same or gets worse, but is usually never gets better. People with sensorineural hearing impairment also experience a reduction in hearing sensitivity across all or part of the hearing range. In addition, since the sensory organ and its associated neural structures are affected in sensorineural hearing impairment, the listener's ability to hear speech clearly usually is permanently affected (i.e., speech remains unclear even when it is made louder). Sensorineural hearing impairment also affects the listener's perception of loudness and pitch. It reduces the listener's ability to tolerate loud sound, and it can make listening to speech in the presence of background competing sounds much more difficult than it would be for normal hearing listeners in comparable situations. Sensorineural hearing loss can result from hereditary factors, disruption of prenatal development because of accident, trauma, maternal illness, or maternal alcoholism or drug abuse, birth trauma, early childhood illness, ingestion of ototoxic substances, acoustic trauma, prolonged exposure to high levels of sound, and other factors.

Central auditory impairment. Persons with central auditory impairment characteristically do not show any loss of hearing sensitivity (unless, of course, their condition exists simultaneously with conductive or sensorineural hearing impairment). Since the neural pathways within the central auditory system are affected with this condition, certain listening behaviors usually are permanently affected. Central auditory dysfunction can result in an impairment of the ability to localize sound or the ability to perceive and attend to speech in difficult listening situations. In young children, central auditory dysfunction may first appear as a problem in speech and language development, or it may surface as a learning or behavioral problem in school. Central auditory dysfunction is a leading cause of learning disorders in children. Children may acquire central auditory problems during prenatal development, at birth, or sometime thereafter for a variety of reasons, such as maternal illness, maternal alcoholism or drug abuse, heredity, disruptions in normal intrauterine development, early childhood illness, or simply due to delayed neurological maturation. Some recent animal research even suggests that prolonged conductive hearing loss in early years may precipitate a deterioration of certain central auditory nerve fibers because of reduced stimulation during critical developmental periods.

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It is essential to understand that any of these conditions (conductive, sensorineural, or central auditory impairments) can occur singly or in combination with one another. For instance, many older persons experience a kind of hearing condition called presbycusis (or hearing loss in the elderly). Persons with presbycusis show auditory dysfunction within cochlear, eighth nerve, and central auditory centers. They suffer not only from reduced hearing sensitivity, but also from reductions in their ability to discriminate and understand speech, their ability to tolerate loud sound, their ability to appreciate and enjoy music, and a variety of other auditory experiences.

Treatment for Hearing Impairment

No matter what type of hearing loss one demonstrates, it is always essential to determine whether the hearing impairment is the result of a pathologic condition that requires medical treatment. In some instances, the conditions that precipitate impaired hearing actually may be life threatening. Consequently, prompt medical attention might be necessary to assure the hearing impaired person's well-being. In some cases, a physician often can remedy the cause of hearing impairment and restore normal hearing. In the majority of instances, however, medical correction of the hearing problem is not possible and often medical treatment is not even necessary. For instance, in the case of sensorineural hearing loss, with few exceptions, once the hearing sense organ and related neural structures have been damaged, they are irrepairable. Even when medical treatment of some underlying otologic pathology is warranted, it is not unusual to find residual hearing dysfunction after medical treatment.

When hearing impairment cannot be corrected by medical treatment, the hearing impaired individual must still contend with a communicatively handicapping condition. In these instances, nonmedical rehabilitative treatment often is beneficial. Many of the communicative problems the hearing impaired experience can be reduced through hearing aid use and through rehabilitative training in the use of residual auditory and visual communication information (i.e., speechreading instruction and auditory training). Adults with permanent hearing problems may require communicative, vocational, and psychological counseling. Children also may require special educational attention including speech and language treatment services as well as special curricular instruction. In these instances, audiologists are instrumental in providing the kind of professional help that can enable hearing impaired persons to deal with the problems caused by their hearing losses.

AUDIOLOGISTS: THEIR TRAINING AND ROLE IN THE DELIVERY OF SERVICES TO THE HEARING IMPAIRED

Audiologists are university-trained nonmedical specialists who are concerned with the identification, evaluation, and prevention of hearing impairment and the rehabilitation of those individuals with hearing problems. In order to qualify as audiologists, individuals must complete a comprehensive plan of study in an accredited institution of higher education culminating with either the master's or doctoral degree in audiology. This educational plan includes course work information regarding the identification, measurement and prevention of hearing impairment and the rehabilitation of individuals with impaired hearing, including considerable information regarding hearing aid technology and the application of this technology in the rehabilitation of the hearing impaired. It also includes information in speech, language, and hearing sciences (e.g., anatomy and physiology of the speech, hearing, and language mechanisms, acoustics, psychoacoustics, bioacoustics, physiological and acoustic phonetics; auditory, speech, and related sensory-perceptual processes; linguistics; psycholinguistics; psychology of language; language and speech acquisition; verbal learning and verbal behavior); psychology; child development; educational processes and methods; the basic sciences; mathematics; the liberal arts; and administrative management. In addition to course work, every student is provided with at least 300 clock hours of supervised practicum experiences in the direct provision of clinical services to communicatively impaired persons.

Audiologists who seek the Certificate of Clinical Competence (CCC) from the American Speech-Language-Hearing Association also must complete at least a nine-month period of supervised clinical experience and must [illegible] the National Examination in Audiology administered by the Educational Testing Service. This examination assesses the candidate's didactic knowledge relative to the identification and prevention of hearing impairment and the rehabilitative management of the hearing impaired. The practice of speech-language pathology and audiology currently is licensed in 31 states, and, in virtually every instance, state licensing requirements are as rigorous as those for the Certificate of Clinical Competence from ASHA.

Audiologists provide and coordinate services to the auditorily impaired which include the evaluation of any hearing and communicative handicap and the rendering of rehabilitative services to communicatively impaired persons. While the audiologist's services often reveal information concerning the site or sites of auditory impairment which is useful to physicians in establishing a medical diagnosis, the primary focus of the audiological assessment is to determine the impact of impaired hearing on an individual's total communication abilities. Through the use of electronic instrumentation, the audiologist can obtain not only the rudimentary information about hearing threshold sensitivity and speech understanding ability, but also can determine more detailed information about residual peripheral and central auditory function and its relationship to communication ability.

The audiologist's role involves much more than just hearing measurement, since understanding the nature of any individual's hearing handicap requires much more than data pertaining to the audiometric parameters of the hearing impairment. The audiologist also must obtain a comprehensive history of the onset and development of the communicative impairment, its relationship to physical and educational development, to social and emotional well-being, and to the individual's vocational and interpersonal communicative competence. It is necessary to determine the amount and success of rehabilitative treatment already received, the individual's communication needs in relation to his or her communication environment, the relationship of the hearing impairment to other possible sensory or perceptual dysfunctions, and the effect of the hearing impairment on the individual's expressive communication skills. The end-product of audiological evaluation is not simply a page of numbers summarizing the results of a variety of audiometric tests, but is instead an expert opinion formed by a qualified professional concerning the individual's total communicative functioning. The audiological evaluation provides the information necessary to determine:

- the nature and extent of the hearing and communication impairment;
- candidacy for amplification based on communicative need;
- potential benefit to be derived by appropriate hearing aid use; and
- the need for any additional audiological rehabilitative services.

Part of the audiologist's responsibility is to advise hearing-impaired persons regarding the need for, the selection of, and the purchase of hearing aid devices. Through auditory testing, the audiologist can assist the indidivual in determining the type of hearing aid to be fit (i.e., all-in-the-ear, behind-the-ear, or body-type hearing aid), whether the fitting should be monaural or binaural, the ear to be fit, and the instrument's appropriateness to the individual's communication needs in a variety of communication environments. The audiologist also orients the new hearing aid wearer to hearing aid use. Part of this process may include instruction in the operation and care of the hearing aid and instruction in how to use a hearing aid to maximize the benefits it can provide and on how to minimize the difficulties experienced in certain situations, such as noisy settings. In some instances, the orientation process may require guided instruction on the gradual use of amplification to assist the hearing aid wearer in adapting to a new pattern of sound reproduction.

The audiologist can also determine the need for additional rehabilitative assistance. Amplification often solves only some of the communicative difficulties experienced by the hearing-impaired. Often, even after hearing aid fitting, an individual will continue to experience communication problems. In those instances, the audiologist can plan and implement a program of visual communication training (including lipreading instruction and instruction in the use of other nonverbal communication information, i.e., facial expression, hand gestures, body posture) to supplement auditory information. The audiologist also can plan and implement an auditory training program designed to help the listener maximize the use of residual auditory function for communication purposes.

The audiologist is trained to provide consultative assistance not only to hearing impaired persons, but also to parents or spouses of hearing impaired people, to physicians, school nurses, teachers, school administrators and others who contact hearing impaired people in a variety of life settings. Audiologists can assist these professional and lay persons to understand the nature of hearing impairment and the impact it has on communication, educational, social, and vocational performance.

In part, this is why audiologists' involvement is an essential component in the hearing services delivery system in the many publicly supporting hearing care programs, such as those supported by the:

- Veterans Administration;
- U. S. Department of the Army;
- Social Security Administration's disability determination program;
- Maternal and Child Health and Crippled Children's Program;
- federal and state rehabilitation services programs;
- state Medicaid programs;
- Indian Health Services;
- state and county health departments;
- Easter Seal treatment centers;
- agencies funded by the United Way;
- United Cerebral Palsy centers; and
- public and private educational facilities and many other institutions and programs.

PROBLEMS EXPERIENCED BY THE HARD OF HEARING

Hearing impaired people differ not only in the type of hearing problems they demonstrate but also in the degree to which their auditory abilities are affected. Consequently, the population referred to as the hearing impaired constitutes a very heterogeneous group. It has been estimated that there are over 16 million people in the United States today with impaired hearing, and at least half of these persons have significant impairment in both ears. Approximately 50% of those persons with bilateral hearing impairment are over 65 years of age, and one-fourth of all persons 65 or older have impaired hearing.

Hearing impairment creates an invisible handicap. Hearing impaired people don't demonstrate the very noticeable problems visually handicapped people exhibit. The behaviors hearing impaired people demonstrate often are misinterpreted by persons with normal hearing. Hearing impaired individuals may seem to be inattentive, rudely disinterested, or simply unintelligent. Hearing impaired children's behaviors may make them appear as if they are disobedient or unable to grasp and learn new concepts. An older hearing impaired person's communicative difficulty may be misinterpreted as a sign of senility. Behaviors that are easily misunderstood or misinterpreted make it easy for others to ignore the special needs and problems of the hearing impaired.

This Subcommittee had heard testimony on the developmental and educational problems hearing impaired children experience in conjunction with your P. L. 94-142 oversight hearings. ASHA has submitted testimony on this topic over the past several years, and additional submissions will be offered during 1980. In the past, this Subcommittee also has received testimony concerning the special needs of that portion of the hearing impaired population called "deaf." The members of this Subcommittee are not totally unfamiliar with some of the problems hearing impaired people experience. Rather than delve into the many problems all hearing impaired people experience, we would prefer to focus on some specific problems that affect the well-being of adult hard of hearing Americans. (In this report, the term hard of hearing refers to those persons whose hearing impairment is sufficient to affect their communicative functioning during activities of daily living. The hard of hearing, as opposed to the deaf, depend on auditory rather then visual information for their primary mode of communications.)

Problems Concerning Telephone Use

The primary problem caused by impaired hearing is a breakdown in communicative ability. This breakdown not only affects communicative effectiveness during in-person conversational situations but also affects the hearing impaired person's ability to use telephone communication. How well one hears on a telephone is determined by a number of factors, not the least of which is the individual's hearing sensitivity and acuity. If sound is not loud enough, the hearing impaired person will find using the telephone virtually impossible.

The telephone has become an integral part of American life. It's used for maintaining interpersonal relationships. It's used to secure the services of others to maintain a functioning household, e.g., calling the plumber, electrician, and appliance repairman. It's used often by elderly or physically handicapped people to order groceries and other household goods. In an era of escalating transportation costs, the telephone will become increasingly important for transacting routine personal and business activities that previously were done with an automobile. The telephone also has become important as an emergency alerting device. People not only use the telephone to send out a call for help for fire, police, rescue, ambulance, and medical services, but also it is used as a means for alerting others of impending civil emergencies or natural disasters.

Teletypewriters (TTY) allow severely hard of hearing persons (and also deaf persons) to use the telephone for visual, instead of auditory, communication. For many hard of hearing persons, TTY provides the only means to maintain telephone contact with other hearing impaired and normal hearing persons. Other hard of hearing individuals can communicate by voice on the telephone if they use telephone amplifying handsets. Some individuals find the degree of amplification these devices provide sufficient to hear and understand speech. For others, telephone handset amplifiers do not provide appropriate amplification and, consequently, offer little communicative assistance. For many hard of hearing persons, it is much easier to use the telephone in conjunction with their personal hearing aids. Many hearing aids have built-in induction coil mechanisms that can pick up telephone electromagnetic radiation and transform it into amplified sound signals.

Unfortunately, few public and community service agencies have TTY facilities for communication with their hearing impaired constituents. While some federal agencies have installed TTY equipment, many have not, and as of yet, there is no executive or legislative mandate to do so. While Section 502 of the Rehabilitation Act of 1973 ensures the accessibility of federally funded buildings to disabled persons, it does not address sufficiently the need to assure access by way of communication. Under the 1978 amendments to the Rehabilitation Act, the Architectural and Transportation Barriers Compliance Board (ATBCB) was given authority to look into the communication barrier problem, but to date little has been done to remove the communication barriers that impede

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access to federal services. Similarly, there is nothing to compel state and local governments, utilities, banks, hospitals, and a variety of other institutions that provide essential public services to assure communicative access for hard of hearing citizens.

Telephonic access to services is no less difficult for the millions of hard of hearing persons whose hearing is sufficient to allow them to depend on voice communication but poor enough to make telephone use difficult without amplification. In some instances, amplifying telephone handsets are being installed in pay booths at various locations. As stated earlier, amplifying handsets may meet the needs of some hard of hearing persons but not others. The telephones in pay booths typically provide no more than 20 dB of amplification. This mild amount of amplification is of benefit primarily to persons with relatively mild hearing impairments. For those with more severe hearing problems, pay booth amplifying handsets may prove to be of little value.

Over the years, the design of the telephone has changed. Modifications to contemporary telephone handsets have reduced the strength of the electromagnetic leakage produced by the handset. Consequently, modern telephone handsets no longer produce an electromagnetic signal strong enough for use with hearing aid induction coil systems. Persons with moderate to severe hearing impairments often rely on hearing aid telephone induction circuitry to receive a sound signal that has been appropriately amplified to enable them to hear and understand speech on the telephone. Obviously, without hearing aid-telephone compatibility, these hard of hearing individuals find telephone use impossible. The Organization for the Use of the Telephone (OUT) has estimated that there are over 35 million telephone handsets that are incompatible with hearing aid use. In many instances, these incompatible handsets are found precisely where hearing impaired persons would need compatible handsets the most, i.e., in pay booths, banks, restaurants, churches, schools and many federal, state and local public buildings.

The barriers to communication and access that impaired hearing creates are made worse when hard of hearing people cannot communicate by telephone. Without the telephone, it often becomes impossible for many hearing impaired persons to call for police, fire, or rescue services, to summon medical assistance, to contact federal, state, county or municipal authorities, to communicate with banks, utilities, cab companies, airlines, or a variety of other business concerns that provide essential services. Without the telephone, the hearing impaired are denied telephonic access to their senators, congressional representatives, or other elected officials. In short, without the telephone, the hard of hearing are deprived of the ready access normal hearing people enjoy to the public services supported through federal, state and local taxes.

Perhaps some of these problems can be corrected by administrative action, but some of them can be handled more effectively by congressional action. For instance, the Congress can enact legislation that would require all federal agencies, and all state and local agencies that receive federal support, to install TTY terminals to provide access to severely hearing impaired TTY users. (Such a bill already has been introduced in the Senate.)

Purchasing TTY equipment can work a significant financial hardship for persons of limited means. Perhaps some of this financial burden could be alleviated by enacting legislation that would provide a tax credit for the private purchase of TTY devices. (Legislation addressing this matter also has been introduced in the House and Senate.) While personal tax credits may provide the means by which many hard of hearing people would be able to purchase TTY terminals, these tax credits would do little to provide an incentive to businesses to install TTY facilities. Business decisions primarily are economically based. In many instances, the prospects of increased business with the hard of hearing may not be sufficient to justify a TTY installation. A business tax credit, however, would provide sufficient incentive to merchants, insurance companies, banks, hotels, and others to provide a means for ready telephonic access by hard of hearing TTY users. Personal or business tax credits do little, however, to alleviate the communicative burden experienced by severly hard of hearing adults or children served through federally funded financial assistance programs. In many cases, persons receiving financial assistance are not provided the additional aid to purchase or lease TTY terminals for personal use. In these instances, the telephonic communicative difficulties these persons experience could be lessened if the Congress provided for the purchase or lease of TTY terminals for severely hearing impaired federal health, welfare, or rehabilitation program beneficiaries.

In addition to providing allowances, incentives and assistance in acquiring TTY, Congress also can provide an effective remedy to the unfair interstate telephone toll structure that discriminates against TTY users. TTYs have a relatively slow transmission speed — much slower than that of normal voice communication. Yet this factor has been given little consideration in the development of the interstate telephone toll structure. Eight states already have provided for reduced intrastate long distance tolls for TTY users. Congressional legislation could effect a similar remedy for these discriminatory, and often prohibitive, interstate TTY toll rates.

It is most ironic to note that Alexander Graham Bell originally designed the telephone as a device for teaching the hearing impaired to learn speech, and that today the telephone is even more inaccessible to the hearing impaired than it was 10 years ago. While no one wants to restrict the further development of telephone technology to advance the common good, technological advances that are brought to the marketplace should be done so with some consideration of the needs of the hearing impaired. Perhaps until the technology develops to the point where it can readily accommodate the needs of the hard of hearing and the normal hearing alike, Congress should prohibit the sale of telephone handsets that are not compatible with the needs of hearing impaired hearing aid wearers. At the very least, the Congress should require telephone hearing aid compatibility in all public buildings and telephone pay booths.

Barriers to Televised Communication

The limitations the hard of hearing experience with telephone use are not the only barriers to a more complete participation in American life. Many people depend on television as their primary source of news and information. Television is used to broadcast the news of the day, presidential addresses, political debates, weather advisories, educational programming, public information, and emergency announcements of impending civil emergencies or natural disasters. Even though television transmission results in a visual image, television broadcasting presumes viewers have hearing that is good enough to enable them to obtain information primarily by auditory means. Without the provision of supplemental visual information, television viewing is out of the question for many severely hard of hearing people.

The Federal Communications Commission recently approved a means for the captioning of television broadcasts for the hearing impaired. All television broadcasters are not required to provide captioning for their programming, and, in fact, only two of the three major television networks have agreed to participate in the captioning program. Those who have agreed to participate will be captioning their network programming, and hearing impaired viewers will be able to receive the captioned broadcasts on their television sets at home. The captioning will be "closed" in the sense that it will be encoded in the broadcast signal at the point of origin and decoded by a device attached to the viewer's set at the point of reception. Through closed captioning, the hearing impaired can have access to the same sources of news, information, and entertainment enjoyed by normal hearing persons.

To have this access, however, the hearing impaired must be able to pay $250 for the captioning decoding device. Unfortunately, the cost of the decoder is considerably more than the cost of a television set, and, again, the hearing impaired are expected to shoulder the cost for removing the barriers which they have done little to erect. Here, again, is an area where congressional action could greatly enhance hearing impaired consumers' efforts to attend to their own needs. If hearing impaired persons were able to take a credit on their personal income tax for the purchase of caption decoding devices, the cost of removing barriers to their ability to interact with the rest of society could be made less burdensome. Again, legislation to attend to this matter already has been introduced in the Senate.

Problems Concerning Emergency Preparedness

After the incident at Three Mile Island, people became acutely aware of the need to be prepared to alert and evacuate the populace from an area threatened by impending disaster such as nuclear plant accidents, toxic chemical spills, hurricanes, tornadoes, floods, or any other kind of civil emergency. Most methods used to alert people about impending civil emergencies, however, presume that people have hearing sufficiently sensitive to hear and respond to the emergency alert. For example, special alerts often are broadcast on television or radio, but severely hearing impaired people rarely listen to either. Similarly, alerts issued via the telephone presume that hearing impaired people have access to telephonic communication, which often they don't. Warnings given by police or fire-rescue loudspeaker in the street, obviously also presume that listeners have hearing good enough to allow them to respond.

Recently, we inquired at the Federal Disaster Assistance Administration (FDAA) to determine what plans FDAA had ready to address the emergency alerting needs of severely hearing impaired persons. In his response to the inquiry, Mr. John W. Gibson, Director of the FDAA Office of Preparedness, noted that none of the state emergency preparedness plans submitted to FDAA addressed the needs of the hearing impaired. According to Mr. Gibson:

> The State Emergency Plans are mainly directives and assignments of function to the State agencies and with few exceptions are rather general. All of them include annexes on evacuation . . . and in most there are references to the special needs of the sick, elderly and handicapped. But apparently none of these plans deal specifically with the problems of warning them.

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According to Mr. Frank Bourgin from the Office of Preparedness, there also is no legislation by which federal authorities could compel state planning agencies to address the emergency alerting needs of hearing impaired persons.

This is an area that sorely needs Congressional attention, since there seems little hope that state authorities will attend to this matter seriously without a clearly worded federal directive. As stated earlier, current legislation does not provide, apparently, for the Federal Emergency Management Agency to oversee state planning to assure it addresses these special needs.

Barriers to Public Communication

In spite of the rapid advances in electronic communication technology, traditional face-to-face human communication still provides the primary means by which people transact the business of society. While television coverage of town meetings, court hearings, congressional sessions, and candidates' debates increases each year, candidates for elected office and elected officials and representatives still depend on live, direct, person-to-person communication to convey their thoughts to their constituents. Usually these transactions take place in large meeting halls, gymnasiums, school cafeterias, and such where the room acoustics do not create ideal communication environments.

Reverberant walls, acoustic "dead spots," ambient room noise (e.g., small talk within the audience, feet shuffling, coughing, etc.), poor speaker pronounciation, and inferior room sound systems degrade the quality of the acoustic signal that reaches listeners. Under these conditions, many normal hearing listeners experience little difficulty understanding the speaker. Everyday speech is filled with acoustic and syntactic redundancy; that is, everyday speech supplies the listener with more information than is necessary for understanding. Hearing impairment eliminates much of the inherent redundancy normal hearing listeners enjoy because of their normal auditory system. So even under ideal listening conditions, hearing impaired listeners (even with hearing aid use) still may be experiencing some communicative difficulty. Under less than ideal listening circumstances, hearing impaired listeners' residual hearing function often is not sufficient to provide enough information for easy speech understanding. In those circumstances, hard of hearing people often function as if they were deaf rather than as persons with lesser degrees of hearing impairment.

As stated earlier, many hearing aids come equipped with built-in telecoil circuitry. In rooms that are "looped" (i.e., rooms equipped with a hard wire system that transduces amplified speech into an electromagnetic signal), hearing aid wearers can use their telecoil devices to pick up and hear the speaker's voice without having to contend with the deleterious conditions created by less than favorable acoustic conditions. In looped rooms, hard of hearing people have the opportunity to participate as completely and as normally as they possibly can. While looping a room does not eliminate all of a hearing impaired person's communicative difficulty, it does minimize the additional difficulty created by environmental conditions. Unfortunately, few public meeting rooms are equipped to enable hard of hearing people to make maximal use of their personal amplification. Consequently, many hard of hearing people are precluded from participating fully in America's social and political system.

Federal legislation could require federal buildings, offices, and agencies to install systems that would allow hard of hearing people to participate more completely in public proceedings. In some instances, the greater access might be provided by installing hard wire loop systems to enable hearing aid wearers to pick up speech without bothersome background noise through hearing aid induction circuitry. In other instances, group amplification facilities in specific areas set aside for the hearing impaired might suffice.

Problems Related to Hearing Aid Purchase

As stated earlier, many hearing impaired people experience communicative benefit through hearing aid use. For those persons with medically incorrectable hearing loss (the overwhelming majority), hearing aid use constitutes an essential part of their rehabilitation. Hearing aids still are expensive devices. Many people forego hearing aid use not because they are not beneficial, but simply because they cannot afford them. Consequently, many older retired persons, others on fixed incomes, and many public assistance recipients have to do without the only device that could substantially reduce the communicative impediments they must deal with daily. Approximately one-fourth of all Americans over 65 have impaired hearing. In fact, approximately half of all who have bilateral hearing impairment are elderly. This is not surprising considering that the deleterious effects of noise and other ototoxic influences accumulate over time along with the normal physiological deterioration that accompanies aging. In a society dominated by a youth-oriented culture, older persons find it increasingly necessary to maintain contact with others in society to forestall their being cast aside or ignored as cantankerous and senile. It is ironic that aged persons' ability to maintain an optimal communicative link with society is worse when it is needed the most.

Infants and young children whose parents are without sufficient financial resources can be provided hearing aids through several federal and state health and education programs. Veterans have hearing aids provided for them through the Veterans Administration hearing aid program. Some persons, especially those with severe to profound hearing losses, can receive assistance procuring hearing aids through federally supported state vocational rehabilitation programs (provided hearing aid use is necessary for employment). For the elderly, however, no assistance is available at all. Currently, hearing aids are not provided through Medicare. The irony, again, is that Medicare provides no assistance for those who suffer with one of the most predominant conditions among the elderly.

Similar circumstances face younger adults who either must live on fixed incomes or receive public financial support. Currently, only 28 states provide for hearing aid purchase under their Medicaid plans. As far as federal regulations are concerned, the purchase of hearing aids and related services is optional, and unless an individual is actively seeking employment (which presumes they are employable) and unless hearing loss is severe enough, he or she might not be able to receive any financial assistance for rehabilitative care. For example, in Pennsylvania, hearing aids are not covered by the state medical assistance program. Consequently, hundreds of hearing impaired public assistance recipients are denied appropriate care for their handicapping conditions. The same is also true in 21 other states.

While many state vocational rehabilitation (VR) programs provide for hearing aid purchase and related services, states often require that hearing aid use must be directly related to an individual's employability. When states cut budgetary allocations, it is not unusual to see cutbacks in the provision of hearing aid and related rehabilitative services through state VR programs. For instance, not long ago in the State of New York, fiscal restraints prompted state VR officials to reduce the provision of hearing aid related services only to persons with profound hearing loss -- hearing loss so profound that hearing aid use normally would have been contraindicated anyway. Consequently, many hard of hearing New Yorkers were denied rehabilitative assistance even though it would have enhanced their employability.

With very few exceptions hearing aid purchases and hearing aid related services also are not covered by private insurers' health and medical care plans. Private insurers often look to the federal government as a model for their own insurance offerings. Federal reluctance to provide hearing rehabilitative coverage acts as a disincentive to private insurers.

The hearing aid delivery system has been controversial. On several occasions House and Senate committees have heard testimony regarding sales abuses suffered by hearing impaired consumers. In fact, until most recently, the Federal Trade Commission (FTC) was prepared to promulgate a hearing aid industry trade regulation rule to attempt to effect a remedy for this matter. The hearing aid delivery system also has been the focus of disharmony among the various providers of services to hearing impaired consumers. In recent years, these providers have been struggling to prevent any one group from monopolizing the provision of services to hearing impaired persons by controlling the point of entry into the hearing aid services delivery system. This interoccupational disharmony has done little to encourage consumers to seek help with their hearing problems.

In 1977, the U. S. Food and Drug Administration (FDA) promulgated a rule governing the sale of hearing aids. The regulation stated that everyone should be examined by a physician within six months prior to receiving an aid, but a loophole was written allowing any adult to waive the medical examination for any reason whatsoever. Under the Medical Device Amendments, state laws that are more stringent (i.e., they provide a greater measure of consumer protection) are preempted. Several of these state laws - notably those of New York, New Jersey, Massachusetts, Minnesota, and the District of Columbia - require a test of human hearing prior to the sale of an aid. Those states have petitioned for exemptions from preemption and the FDA has notified them that they intend to deny their petitions.

Under the FDA's regulation, hearing aids can and are being sold to persons without either a medical examination or a test of their hearing. This is leaving the hard of hearing, especially the elderly, vulnuerable to the pressures of hearing aid salesmen. Without testing, it is impossible to know the type, nature and degree of loss or even whether a hearing aid is necessary or will be beneficial. Without requiring a hearing test, state consumer protection officials or private parties lack the fundamental evidence to prove whether or not a hearing aid was appropriately sold. Furthermore, the FDA's regulation has never been followed by federal agencies which every year dispense thousands of hearing aids. The FDA has brought pressure against the Health Care Financing Administration's

Medicaid Bureau to issue a reimbursement rule that would be fraught with the same deficiencies as its own.

The FDA's regulation, its preemption of state laws providing greater protection to consumers and its pressure on other agencies to follow its suit has been a major setback in providing quality care to the hearing impaired, especially the elderly. It is necessary for Congress to review this situation and allow the states and federal agencies to provide appropriate services and to protect their citizens or beneficiaries from fraud or abuse.

The Need for Public Information

Many consumers still harbor the misbelief that hearing impairment and hearing aid use signifies mental or physical incompetence. When confronted by a recommendation for hearing aid use, it is not uncommon to hear even a 70 year old person remark "I'm not that far gone that I need to wear a hearing aid." Sometimes well-meaning but misinformed physicians do little to help dispell the misconception people have concerning hearing aids. Some physicians still cling to the belief, even though it is in error, that persons with sensorineural hearing loss cannot benefit from hearing aid use. To a great degree, consumers' misconceptions will be corrected only by providing them with appropriate information about hearing, hearing problems, and hearing aids.

In the past, government has played a role in developing public information materials in a number of areas including hearing and hearing problems. The National Bureau of Standards ("Facts About Your Hearing and Hearing Aids") and the National Institute of Neurological and Communicative Disorders and Stroke ("Hearing Loss: Hope Through Research") have produced excellent booklets on this topic. While the materials are good, the dissemination of these materials has been limited. Public information is essential if people are to know what causes hearing problems, how they can be detected and managed, where they can seek professional assistance, and how hearing problems can be prevented. This last item - preventing hearing problems through public information - is probably the most cost effective means for reducing hearing health care and rehabilitation costs.

For instance, prolonged or repeated exposure to intense sound can permanently damage the sensory structure inside the inner ear. Virtually all of the noises people are exposed to each day are created by themselves or other people. People use excessively loud lawn mowers to cut their grass, loud power tools to do their work, loud appliances to assist with housework, loud recreational vehicles for their play. People often frequent loud discos or listen to music at home at excessively loud levels. In each of these instances, these persons *choose* to expose themselves unnecessarily to harmful noise levels. The problem, however, is that many of these persons may not have had the information they needed on the relationship of noise exposure to hearing loss to enable them to make an *informed* choice. Once informed, people often choose to purchase and use quieter appliances, power tools, and recreational vehicles. In most instances, intelligent, informed individuals use care in the manner in which they expose themselves to high levels of sound in other avocational pursuits.

The Environmental Protection Agency (EPA) is charged with the responsibility for controlling the public's exposure to unnecessary and unhealthful environmental pollutants including noise. Thus far, EPA has made significant advances in controlling environmental noise through regulation e.g., controlling noise emission from automobiles, trucks, tires, motorcycles, and product noise labeling requirements. Through the Quiet Communities Program, EPA also has sought to develop innovative approaches to community self-help efforts to control noise within the community. Unfortunately, EPA has not pursued consistently its efforts to control environmental noise through a well-designed and coordinated public information campaign, even though such a program could well hasten the attainment of the Agency's noise control and abatement goals. While EPA has some well developed public informational brochures and pamphlets, dissemination has not been widespread. An informed public could exert a positive force on the marketplace to eliminate noisy products and to create a demand for quieter ones. An informed public might also choose to alter personal and recreational lifestyles to shun those conditions that create a hazard to normal hearing.

No public information campaign will be successful, however, unless the information reaches consumers. No campaign will be successful unless the Congress provides the funding to make the dissemination of pamphlets, booklets, television and radio announcements as widespread as possible.

Regulations to Prevent Hearing Loss

It has been estimated that there are over   million Americans who are exposed unnecessarily to high levels of workplace noise each year. By its enactment of the Occupational and Safety Act, the Congress recognized this problem and acted affirmatively to end it. The Occupational Safety and Health Administration (OSHA) has reduced a number of unnecessary workplace hazards through its regulation and inspection program. OSHA has been criticized, perhaps deservedly so, for developing regulations to an excess. The repeated criticisms have heightened congressional suspicion of regulatory overkill, and OSHA has been urged to curb what some describe as its regulatory abuse. Unfortunately, however, this pressure to deregulate, or to regulate less, has worked to the disadvantage of American laborers as far as occupational noise is concerned.

Industry has done little on its own to reduce the noise hazards millions of workers are exposed to daily, and it seems obvious that this problem will only be dealt with effectively through well-defined and vigorously enforced workplace noise regulations. With the repeated criticisms to which it has been subjected, OSHA seems a bit gun-shy. Since 1973, OSHA has been talking about the development of regulations to control the health hazards of workplace noise. No regulation has yet been produced. Without an effective workplace noise rule, little will be done to advance the conservation of hearing of American workers. It's indeed ironic that the insidious effects of occupational noise accumulate to be their worst just when workers need good hearing the most -- in their retirement years. Unless effective action occurs now, America's health care system will have to be prepared to assume the burden to provide rehabilitative assistance to the many who will have permanent hearing loss by retirement age.

The Need for Hearing Research

While public information and regulations are important components of any prevention or hearing conservation program, basic scientific and applied

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research may provide the means by which hearing impairment in adults, children, newborns, and the yet to be born can be prevented. Research also can provide the scientific and clinical breakthroughs needed to advance the state of the science and the art of hearing rehabilitation. Rehabilitative research is always the hardest to conduct. By its nature, it often must be conducted over a period of years rather than months. Breakthroughs, when they occur, come slowly and only because of investigator persistence. People who are responsible for authorizing funds for research often are impatient with rehabilitative research because the information yield produced by this research often is low when viewed over a short term. Protracted research is often difficult for researchers to justify to their institutions, regardless of its importance, without substantial federal financial support.

Establishing appropriate research priorities is essential to any purposeful research plan. It may be necessary to convene national conferences to determine the current state of the art and science and to clarify priorities for research. Such conferences could focus on (1) critically reviewing the application of hearing aid technology with the hard of hearing, (2) examining the state of the art of aural rehabilitative treatment and establishing directions for future research, and (3) identifying the telecommunication and other communicative technological needs of the hearing impaired and assessing the degree to which these needs are being met. On previous occasions, ASHA has submitted suggested research areas that are fundamental to hearing rehabilitation. Some of the areas were the need to:

- develop auditory measures that were reliably predict listener communication performance with wearable hearing aids,
- investigate reduced central auditory function on hearing aid user communicative efficiency and satisfaction,

- develop suitable psychometric instruments designed to assess the audiologic rehabilative needs of hearing impaired persons and to evaluate the effectiveness of rehabilitative procedures,
- develop innovative aural rehabilitative training strategies for use with hearing impaired persons,
- investigate the effect of various degrees on impaired sensory function or listener's performance of basic auditory perceptual tasks,
- determine the relationship between various parameters of residual auditory function in congenitally hearing impaired children and their ability to develop speech and language with amplification,
- develop measures for determining appropriate educational strategies or training prelinguistically hearing handicapped children,
- develop digital signal processing hardware for use in wearable hearing aid devices and auditory trainers,
- develop technology for multisensory aids for use by severely hearing impaired persons, and
- investigate auditory and visual perceptual skills associated with speech perception through speechreading.

Obviously, this listing is by no means all inclusive, but it does represent some of the more critical hearing rehabilitative research needs.

The Need to Plan and Provide Effective Rehabilitation Programs and Services for the Hard of Hearing

The Rehabilitation Services Administration (RSA) is the agency primarily responsible for attending to the rehabilitative needs of handicapped Americans. Within RSA, the Deafness and Communicative Disorders Office (DCDO) has been responsible for addressing the vocational rehabilitative needs of the hearing impaired (including the deaf and hard of hearing). DCDO traditionally has been expected to provide leadership in planning, developing, implementing and evaluating the nation's rehabilitation programs for hearing impaired persons.

In the past, DCDO has been involved in a wide range of activities in an attempt to fulfill its organizational ideals. DCDO routinely has worked with other RSA Central Office Staff on projects pertaining to the rehabilitative needs of the deaf. It also has worked with regional representatives; state vocational rehabilitation agencies; other pertinent state and local private, public and voluntary institutions and services; national, state, local and international voluntary and professional organizations concerned with communicative disorders, including religious denominations that have clergy for the deaf; college and university, other post-secondary and technical-vocational education programs; and rehabilitation resources such as research and training centers, comprehensive rehabilitation centers, special centers for coordinating, referral, and supportive counseling, special centers for diagnosis, evaluation, adjustment, and/or vocational training, and selected state and local affiliates of national organizations. DCDO has tried to involve itself as extensively as possible in stimulating, developing, directing, and evaluating programs and services designed to meet the needs of its constituents, and perhaps that has been one of its problems. Currently, services and programs are directed primarily to the prelingually hearing impaired individual who is generally a product of traditional special class or special school and who currently depends on the support systems at local, state and national levels.

DCDO's fiscal resources have been very limited, and the Office has been severely understaffed for a number of years. Currently, there is no one on the DCDO staff who possesses professional expertise in the areas of speech-language impairment or hearing impairment other than deafness. The limited resources the Office has been given have been allocated to programs for the deaf (who make up only 10% of the entire population who are hearing impaired). While deafness certainly is one of the most profound of all communicative handicaps, and while the deaf have long been among the most underserved all all handicapped persons, the comprehensive rehabilitative needs of hard of hearing Americans have been ignored by RSA.

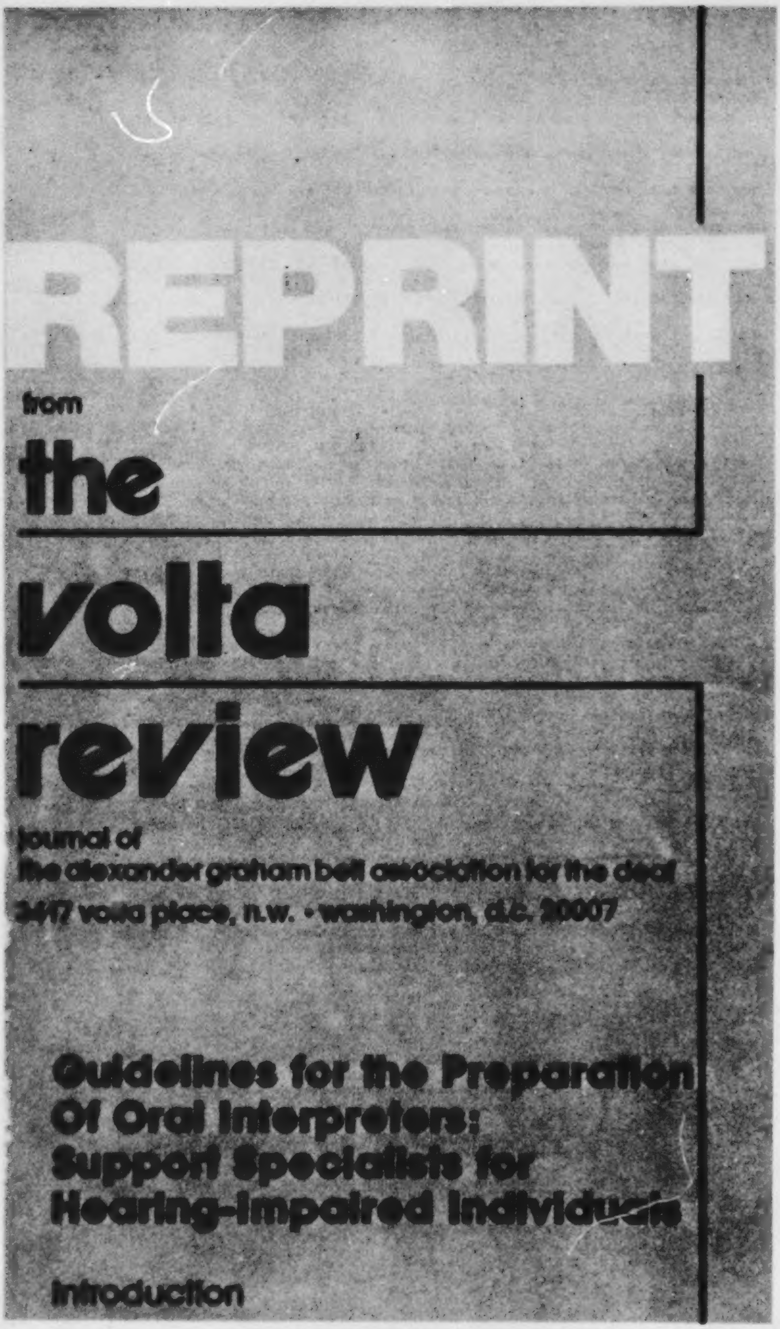
In part, the current dilemma is caused by administrative conditions and legislative-political realities that have left the deafness and communicative disorders program with only meager support. For instance, unlike the programs for the blind and the developmentally disabled, the program for the communicatively handicapped (including the hard of hearing, the deaf, and the speech-language impaired) is without a legislative base. Consequently, DCDO does not receive funds dedicated by Congress to address the rehabilitative needs of its constituents. The Office exists only by administrative authority. It has no program budget and no discretionary funds. Of all the programs dedicated to persons with specific disabilities, the program for the communicatively handicapped is the most susceptible to the precariously changing currents in the American political stream. It already gets all too little funding when economic and political conditions are good, but it gets even less when times are bad. It is denied staff, as are other programs during hiring freezes, but it remains woefully understaffed even when freezes are lifted.

Late last year, a report was issued to the Commissioner of RSA by a Task Force that was charged to examine and evaluate the current RSA communicative disorders program and to recommend suggestions for change. In its report, the Task Force recommended the adoption and implementation of a proposed program development plan designed to improve significantly the scope and quality of programs and services provided to all communicatively handicapped persons including the hard of hearing. To a degree, the program development plan can be implemented solely on the basis of the Commissioner's administrative authority. Realistically, however, the long-term cure for DCDO's current ills can be effected only through Congressional action — an action that provides not only a legislative base, but also consistent fiscal support through periodic Congressional budgetary appropriations. Without Congressional support, the comprehensive long-term planning needed for developing and implementing programs for the hard of hearing will be thwarted.

CONCLUSION

Most assuredly, this report does not encompass all of the problems experienced by hard of hearing persons. Rather, it represents an illustration of only a few of the problems that we believe are more significant. Others who will be providing this Subcommittee with their views probably will discuss different problems or they will discuss these problems further, but from a different perspective. Obviously, the views the members of this Subcommittee will hear from the hard of hearing themselves should be considered significant.

For its part, the American Speech-Language-Hearing Association appreciates greatly the opportunity to speak out on behalf of the over 16 million hearing impaired persons who live in the United States today, and we sincerely hope you find our comments helpful. The American Speech-Language-Hearing Association is willing to do all it can to help you to work to find solutions to the everyday problems experienced by America's communicatively handicapped citizens.



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Guidelines for the Preparation Of Oral Interpreters: Support Specialists for Hearing-Impaired Individuals

Introduction

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Guidelines for the Preparation Of Oral Interpreters: Support Specialists for Hearing-Impaired Individuals

Introduction

Winifred H. Northcott, president, Alexander Graham Bell Association for the Deaf

The current educational and social environment is one of respect for individual differences among deaf and hard-of-hearing people regarding their expressed mode of communication preference in daily living. Recently, there has been a groundswell of interest and action directed toward the formal preparation and eventual certification by the Registry of Interpreters for the Deaf, Inc. (RID) of a new, additional support specialist—the Oral Interpreter (as distinct from the Manual Interpreter). The Oral Interpreter is to be available on request for those deaf and hard-of-hearing individuals who rely upon speechreading, with or without auditory input, as their preferred means of interpersonal communication.

In 1977, strong regulations were written to implement Section 504 of the Rehabilitation Act of 1973 which provides that:

> No otherwise qualified handicapped individual in the United States shall, solely by the reason of his handicap, be excluded from the participation in, be denied the benefit of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

This small section of the law is administered by the Office of Civil Rights. Violation of the rights of a handicapped person (deaf or hard of hearing, in this instance) carries the threat of sanctions, including the withholding of federal funds for demonstrated discrimination. The missing link has been the Oral Interpreter.

Definition of Terms

An Oral Interpreter is usually a hearing person. He or she will proceed at a normal rate of speed and enunciation and will generally be a few words behind the speaker in the smooth repetition of statements. A skilled Oral Interpreter will sometimes rephrase or add a word or phrase to give higher visibility on the lips for added comprehension. Natural body language and gestures give added flavor.

ORAL INTERPRETING: the incidental or substantial rewording of the speaker's remarks, presented with or without voice and always with natural lip movements.

ORAL TRANSLATING: verbatim presentation of the speaker's remarks by means of natural lip movements, with or without voice.

REVERSE ORAL INTERPRETING: verbal rephrasing of the message of a hearing-impaired (deaf or hard-of-hearing) person who may or may not use voiced speech, standard inflectional patterns, and grammatical construction.

REVERSE ORAL TRANSLATING: vocal expression of the exact words of a hearing-impaired (deaf or hard-of-hearing) speaker who may or may not use voiced speech, standard inflectional patterns, and grammatical construction.

Earlier Activity

At the biennial National Convention of the Alexander Graham Bell Association for the Deaf, held in Boston, June 1976, one section presentation was titled: "Oral Interpreters: A Missing Link Among Support Specialists for the Hearing Impaired." In response to deaf and hard-of-hearing panelists at the convention who presented "The Case for Oral Interpreters," Carl Kirchner, then president of the Registry of Interpreters for the Deaf, concluded his formal paper with the statement:

> The RID, Inc. expresses its willingness to work with the Alexander Graham Bell Association and its hearing-impaired members to establish a certificate for oral interpreting. Hopefully, with your help and guidance, such a certificate could be established. The RID stand ready and willing to serve.

The next move was up to the A.G. Bell Association. It took the form of a published article in *The Volta Review* (Northcott, 1977) identifying the various dimensions of professional training and specialization that must be considered in exploratory discussions prior to implementation of training programs and eventual certification of graduates as Oral Interpreters by the Registry of Interpreters for the Deaf.

Subsequently, RID invited the A.G. Bell Association and the National Technical Institute for the Deaf (NTID) to share the responsibility of defining certification requirements for Oral Interpreters.

In parallel action in 1978, the Council of Directors of Federally Funded Post-Secondary Programs for the Deaf convened to develop "Policies, Procedures, and Guidelines for the Implementation of the National Interpreters for the Deaf Training Act of 1978," which were submitted to the U.S. Office for Handicapped Individuals. Named in the guidelines are four deaf parent/consumer groups: International Parents' Organization (AGB), International Association of Parents of the Deaf, National Association of the Deaf, and Oral Deaf Adults Section (AGB).

Dr. William Castle, chairperson, convened a meeting of representatives of the four groups listed above in St. Louis on June 23, 1978 during the biennial National Convention of the A.G. Bell Association. The purpose was to include reference to Oral Interpreters at different points throughout the document relating to implementation of the National Interpreters for the Deaf Training Act of 1978. However, a separate section on Oral Interpreters was neither developed nor appeared in the final document.

Thus, on October 27–28, 1978, in Washington, D.C., the A.G. Bell Association held a workshop, "Focus on the Oral Interpreter," to revise a first draft of these guidelines, originally written by Winifred H. Northcott. Following formal presentations, 25 deaf and hearing participants worked in small groups through discussion and consensus votes to modify, expand, and shape the list of competencies (knowledge, skills, and attitudes) required for efficient performance as an Oral Interpreter. Deaf and hearing individuals from inside and outside the A.G. Bell Association, oral and manual interpreters, public school administrators of programs for hearing-impaired persons, and representatives from NTID and the National Association of the Deaf (NAD) comprised the group. ODAS member Beth Powell took the leadership role of workshop coordinator and deaf individuals were the formal discussion chairpersons. These guidelines are the product of this endeavor.

The A.G. Bell Association enthusiastically endorses the assurance of separate but equal specialists—the Oral Interpreter and the Manual or Simultaneous Interpreter—in order that the rights of every deaf and hard-of-hearing individual to full participation in society be preserved. Each person is entitled to receive support when needed, both during school years and as adults, in the mode of communication of his or her choice (*Oral* or *Simultaneous* method). This may be by means of speechreading alone (with amplification as appropriate), supplied by an Oral Interpreter on request, or a combination of speechreading and sign language as presented by a Manual Interpreter, on request.

On June 23, 1978 the Council on Education of the Deaf (CED)* formally resolved upon action of the Board of Directors of each of its constituent organizations that:

> CED views the role of Oral Interpreter as a necessary adjunct to equal opportunity for all hearing-impaired individuals (deaf and hard of hearing) and recommends that

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*The constituent members of the Council on Education of the Deaf are the Alexander Graham Bell Association for the Deaf, the Conference of Executives of American Schools for the Deaf, and the Convention of American Instructors of the Deaf.

> **agencies involved with the provision of or training or certification of Simultaneous or Manual Interpreters for the Deaf consider the establishment of guidelines, competencies and criteria for certification of Oral Interpreters as soon as practicable.**

Thus, we leave the era of rigidity related to methods of communication, with its defenses and accusations reflected in value judgments, and take advantage of the current process by which alternatives to individualized services required by a single deaf or hard-of-hearing person are assured under Section 504 of the Rehabilitation Act of 1973. In this hospitable environment, the fledgling Oral Interpreter is recognized as a valuable member of the support team.

REFERENCE

Northcott, W.H. The Oral interpreter: A Necessary support specialist for the hearing impaired. *The Volta Review*, 1977, 79, 136–144.

The Role of Interpreters for the Deaf

James Stangarone, president, Registry of Interpreters for the Deaf

Since the Registry of Interpreters for the Deaf, Inc. pioneered the certification of over 2000 sign language interpreters, it is again most appropriate for this organization to certify Oral Interpreters for the deaf. At present, RID has over 3500 members of whom 2100 are certified. These members are located within 60 chapters in 42 states. This vast network of interpreters has been providing services to deaf individuals in medical, educational, legal, cultural, religious, and mental health settings.

We are now working with the National Technical Institute for the Deaf to develop a prescreening program and actual certification procedures. When this project is completed, a workshop will be convened to bring together members of various organizations who provide direct or indirect services to deaf individuals. The certification procedures will be presented at this workshop and, if approved, will be given to the RID for implementation.

The Registry of Interpreters for the Deaf has also developed its own "Principles, Guidelines and Standards for RID, Inc. Accreditation of Interpreter Training Programs." The training and certifying of oral interpreters has been included within this process.

We would like to take this opportunity to thank the National Technical Institute for the Deaf and the Alexander Graham Bell Association for the Deaf for the outstanding contribution they have made in preparing the guidelines for this project.

The Oral Interpreter or Translator

The services of an Oral Interpreter may be required in a variety of situations depending upon the modality preference of individuals with varying degrees of hearing loss. Among the more common instances are: group discussions in a classroom or lecture hall, public speeches and programs, conversation (interviews, person to person), professional settings (courtrooms, consultations, conferences), and media (television, radio, telephone).

An interpreter shall not espouse any particular mode of communication (oral, simultaneous, or manual) as superior to another, but shall be guided by the expressed wishes of the consumer(s) as to the mode of communication to be employed.

A. *PERSONAL CHARACTERISTICS* The following characteristics are conducive to speechreading without strain:
  1. Facial characteristics conducive to speechreading:
    a. mobile lips,
    b. no deformation of teeth, lips, jaws,
    c. precise enunciation and diction,
    d. expressive face and eyes,
    e. well-trimmed beard and mustache, if any;
  2. Experience in communication with a variety of deaf and hard-of-hearing individuals;
  3. Clear speech;
  4. Appropriate regional or ethnic accent;
  5. Clothing suitable for occasion including lack of distracting jewelry and/or sunglasses.

B. *KNOWLEDGE* The Oral Interpreter should have working knowledge of the following:
  1. The role and function of an Oral Interpreter and translator;
  2. Homophenes (low visibility words) and how to rephrase them for increased comprehension;
  3. Public speaking techniques;
  4. Principles of communicative and interpersonal dynamics;
  5. Variability of the responsive behavior of hearing-impaired (deaf and hard of hearing) individuals;
  6. Procedures and protocol for special situations (i.e., telephone);
  7. Current trends in education of the hearing impaired (deaf and hard of hearing);
  8. Hearing aids—their uses and limitations;

9. Theories and practices of mainstreaming hearing-impaired children in the regular classroom—integration and assimilation as processes;
10. Telecommunication systems and other devices and their use;
11. Formal systems of speechreading/speechreading instruction;
12. Psycho-social aspects of deafness;
13. Professional organizational activities, certificates, publications, and educational/work environments related to hearing-impaired individuals of school and post-school age;
14. Facial/body language—client/interpreter feedback;
15. Various etiologies of deafness.

C. *SKILLS* The oral interpreter shall demonstrate the ability to:

1. Transmit effectively the style, mood, and intent of the speaker(s);
2. Adapt the environment to meet the needs of clients in one-to-one or group situations;
3. Apply appropriate auditory and visual memory techniques in the process of interpreting and translating;
4. Identify a client's primary channels for receptive and expressive communication;
5. Identify in an unobtrusive manner a change in speakers as well as a change in subject;
6. Rephrase sentences for maximum visibility when necessary while retaining their original meaning;
7. Demonstrate ability to use the variety of telecommunication systems and devices;
8. Demonstrate appropriate public speaking techniques as they apply to oral interpreting and translating;
9. Be able to interpret verbally the statement of hearing-impaired individuals having varying degrees of speech intelligibility (reverse interpretation or translation);
10. Exhibit precise speech production;
11. Give evidence of smooth, not choppy, interpreting style;
12. (Optional) Use conversational sign language and finger-spelling for the purposes of reverse interpreting and translating.

D. *ATTITUDES* The Oral Interpreter is one who:

1. Is sensitive to the dignity of each hearing-impaired individual;
2. Recognizes the purposes of the various organizations of and for hearing-impaired individuals and communicates them without bias;
3. Supports professional organizations related to the promotion of speech, speechreading, and use of residual hearing;
4. Is willing to continue to develop and upgrade professional competence;

5. Performs in accordance with national, state, and local guidelines and regulations, and the code of ethics;
6. Relates positively to all hearing-impaired consumers of interpreting services;
7. Demonstrates willingness and patience to work with hearing-impaired individuals with varying degrees of speechreading proficiency;
8. Recognizes personal performance strengths, weaknesses, and limitations and invites constructive suggestions for improvement as an Oral Interpreter;
9. Demonstrates a sensitivity to clients' preferences in the interpreting situation.

E. *ENVIRONMENT* It is the responsibility of the Oral Interpreter to consult with the client and facilitate the following:
   1. Lighting and seating arrangements for maximum efficiency in speechreading (individual or group);
   2. Optimum auditory environment when the client uses hearing, with or without an aid.

F. *CURRICULUM* Any program designed for the training of Oral Interpreters shall meet the requisites below.
   1. The curriculum shall contain:
      a. Formal study of speechreading systems;
      b. Social interaction with hearing-impaired (deaf and hard-of-hearing) individuals outside the training site;
      c. Educational management systems;
      d. Psycho-social aspects of deafness;
      e. Dramatic/theatrical techniques;
      f. Articulation/distinction; and
      g. Practicum (group discussions, role playing, mock evaluations, supervised practice of oral interpreting and translating, and reverse oral interpreting and translating).
   2. The program shall demonstrate that its Oral Interpreter graduates meet the requirements outlined in these guidelines.
   3. The program shall include a job placement component and maintain, along with AGBAD and RID, a referral list of certified Oral Interpreters.
   4. The curriculum shall demonstrate that it is designed to prepare the trainees to meet the knowledge, skills, and attitude requirements of the oral specialist certification that will be awarded by RID in compliance with Oral Interpreter guidelines and subsequent standards to be developed.
   5. The admissions policy shall be consistent with that of the host institution, yet flexible enough to accommodate various levels of competence at or above the minimal requirements for entry.

6. Availability of oral deaf individuals within the host institutions for use as subjects in practicum is essential.

G. *TRAINING SITES* The A.G. Bell Association for the Deaf will assume a leadership role in the identification and establishment of programs for training Oral Interpreters leading to certification by RID. Training sites will be selected in accordance with need and resources available and have as a minimum the following characteristics:

1. Accreditation by its respective regional accrediting body;
2. Compliance with Sections 503-504 of the Rehabilitation Act of 1973 in providing education and employment opportunities to handicapped persons who have the capability of carrying out their employment responsibilities;
3. Program content consistent with the goals and objectives of the program for training Oral Interpreters;
4. Climate of openness, acceptance, and flexibility for the challenges presented by the program for training Oral Interpreters;
5. Demonstration of financial commitment to continuation of an Oral Interpreter training program;
6. Resources to support the program including support courses in related fields and library capability for providing professional books, periodicals, journals, and materials on topics such as deafness, use of residual hearing, and the range of achievement among deaf and hard-of-hearing individuals;
7. Demonstration of a history of sustained effort in recruitment of individuals who can benefit from the services of an Oral Interpreter.

Registry of Interpreters for the Deaf, Inc. Code of Ethics*

Preamble:

RID, Inc. refers to individuals who may perform one or more of the following services:

Interpret from:
Spoken English to American Sign Language
American Sign Language to Spoken English

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*Revised July, 1978

Transliterate from:
Spoken English to Manually Coded English
Manually Coded English to Spoken English
Spoken English to Paraphrased Nonaudible Spoken English
Spoken English to Spoken English

Gesticulate/Mime, etc. from:
Spoken English to Gesture, Mime, etc.
Gesture, Mime, etc. to Spoken English

The RID, Inc. has set forth the following principles of ethical behavior to protect and guide the interpreter, the consumers (hearing and hearing-impaired), and the profession, as well as to insure for all the right to communicate.

Code of Ethics:

1. **Interpreters shall keep all assignment-related information strictly confidential.**

   Guidelines:

   Interpreters shall not reveal information about any assignment, including the fact that the service is being performed. Even seemingly innocuous information could be damaging in the wrong hands. Therefore, to avoid this possibility, interpreters must not say anything about any assignment.

   If a problem arises between the interpreter and either person involved in an interpreting assignment, the interpreter should first discuss it with the person involved. If no solution can be reached, both should agree on a third person who can advise them.

   When training new interpreters by the method of sharing actual experiences, interpreter trainers shall not reveal any of the following information: name, sex, age, etc. of the deaf or hearing person(s); day of the week, time of the day or time of year the situation took place; the location, including the city, state, or agency; other people involved; unnecessary specifics about the situation. It only takes a minimum amount of information to identify the parties involved.

2. **Interpreters shall render the message faithfully, always conveying the content and spirit of the speaker, using language most readily understood by the persons whom they serve.**

   Guidelines:

   Interpreters are not editors and must transmit everything that is said in exactly the same way it was intended. This is especially difficult when the interpreter disagrees with what is being said or feels uncomfortable when profanity is being used. Interpreters should remember that they are not at all responsible for what is said, only for conveying it accurately. If the interpreter's own feelings interfere with rendering the message accurately, he or she shall withdraw from the situation.

While working from Spoken English to Sign or nonaudible Spoken English, the interpreter must communicate in the manner most easily understood by the deaf person(s), be it American Sign Language, manually coded English, fingerspelling, paraphrasing in nonaudible Spoken English, gesturing, drawing, or writing, etc. It is important for the interpreter and deaf person to spend some time adjusting to each other's way of communicating prior to the actual assignment. When working from Sign or nonaudible Spoken English, the interpreter shall speak the language used by the hearing person in the spoken form, be it English, Spanish, French, etc.

3. Interpreters shall not counsel, advise, or interject personal opinions.

Guidelines:

Just as interpreters may not omit anything that is said they may not add anything to the situation, even when they are asked to do so by other parties involved.

An interpreter is only present in a given situation because two or more people have difficulty communicating, and thus the interpreter's only function is to facilitate communication. He/she shall not become personally involved because in so doing he/she accepts some responsibility for the outcome, which does not rightly belong to the interpreter.

4. Interpreters shall accept assignments using discretion with regard to skill, setting, and the consumers involved.

Guidelines:

Interpreters shall only accept assignments for which they are qualified. However, when an interpreter shortage exists and the only available interpreter does not possess the necessary skill for a particular assignment, this situation should be explained to the consumers of the interpreting service. If the consumers agree that services are needed regardless of skill level, the available interpreter will have to use his/her best judgment about accepting or rejecting the assignment.

Certain situations may prove uncomfortable for some interpreters. Religious, political, racial, or sexual differences, etc. can adversely affect the facilitating task. Therefore, an interpreter shall not accept assignments which he/she knows will involve such situations.

Interpreters shall generally refrain from providing services in situations where family members, or close personal or professional relationships may affect impartiality, since it is difficult to mask inner feelings. Especially in legal settings, the ability to prove oneself unbiased when challenged is lessened. In emergency situations, it is realized that the interpreter may have to provide services for family members, friends, or close business associates. However, all parties should be informed that the interpreter may not become personally involved in the proceedings.

5. **Interpreters shall request compensation for services in a professional and judicious manner.**

Guidelines:

Interpreters shall be knowledgeable about fees which are appropriate to the profession, and be informed about the current suggested fee schedule of the national organization. A sliding scale of hourly and daily rates has been established for interpreters in many areas. To determine the appropriate fee, the interpreter should know his/her own level of skill, level of certification, length of experience, the nature of the assignment, and the local cost of living index.

There are circumstances when it is appropriate for interpreters to provide services without charge. This should be done with discretion, taking care to preserve the self-respect of the consumers. Consumers should not feel that they are recipients of charity. When providing gratis services, care should be taken so that the livelihood of other interpreters will be protected. A free-lance interpreter may depend on this work for a living and therefore must charge while persons with other full-time work can perform the service as a favor without feeling a loss of income.

6. **Interpreters shall strive to further knowledge and skills through participation in workshops, professional meetings, interaction with professional colleagues, and reading of current literature in the field.**

Guidelines:

Interpreters working as officers and committee members in the national RID and local RID Chapters shall require high standards among interpreters and set up a mechanism to achieve compliance with the Code of Ethics.

7. **Interpreters shall function in a manner appropriate to the situation.**

Guidelines:

Interpreters shall conduct themselves in a manner that brings respect to themselves, the consumers, and the national organization. The term, 'appropriate manner' refers to:

1. The use of clothing that is in contrast to the skin and is not distracting or suggestive;
2. Avoiding the use of drugs or alcohol that would in any way impair performance and/or embarrass consumers; and
3. Conducting oneself in all phases of an assignment in a manner befitting a professional.

REPRINT

The Oral Interpreter: A Necessary Support Specialist for the Hearing Impaired

Winifred H. Northcott

This article reviews the various situations in which oral deaf persons can benefit from the services of an Oral Interpreter and urges the training and certification of Oral Interpreters. Guidelines are given for their interaction with "listeners" and for their professional and personal characteristics.

For years, hearing-impaired persons who use speech and speechreading as their preferred means of communications have turned upon occasion to a friend at hand and conveyed the message, "Clue me in," through a voiced request or puzzled facial expression. The friend then acts as an informal oral interpreter to convey the precise statements or condensation of remarks made by a speaker under circumstances which make third-party intervention necessary. One necessary person on the list of support specialists available to oral deaf youth and adults is the individual, duly trained and certified, who is formally identified and labeled an *Oral Interpreter* (capital *O* and capital *I*). This individual silently repeats the remarks of a speaker, either literally or in slightly paraphrased form to ensure greater clarity and comprehension, pacing himself at a comparable rate of speed and remaining one or two words behind the spoken message at all times.

The Oral Interpreter must be recognized formally as a separate but equal specialist by the National Registry of Interpreters for the Deaf, Inc. (R.I.D.), which is the certifying and training agency for the development of interpreters who currently use the simultaneous method of communication: i.e. conveying meaning by the use of the language of signs, fingerspelling, and mouthing of what another individual says for the benefit of a hearing-impaired person. In the past year, headlines from a New York newspaper addressed attention to "Those Who Hear for the City's Deaf" and described model projects for the training of sign language

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interpreters, funded partially by the state Office of Vocational Rehabilitation. In California, a $108,590 grant to California State University, Northridge, to "train and employ more sign language interpreters" was announced by a member of the President's Committee on Employment of the Handicapped.

different strokes for different folks

This is the decade of focus on the uniqueness of each hearing-impaired individual in the United States and attempts are being made to provide individualized special services that will assure his or her entitlements as a fully participating member of society. It is a decade in which changing educational practices have shattered myths and stereotypes about "the deaf" and made it impossible to offer a clear, definitive set of characteristics in response to the rhetorical question, "Will the REAL deaf child/youth/adult please stand?"

It is a decade in which the low incidence of deafness among the school-age population (.075% or 3 in 4,000 children) is reduced even further in terms of functional behavior as a result of early identification of hearing loss, maximum use of binaural amplification when prescribed, and enrollment in a family-oriented early education program that includes placement in a regular nursery school for the majority of children. As a result, increased numbers of "graduates" are integrated into regular classrooms in subsequent years. English is the "mother tongue" and has been acquired in a primarily auditory or visual rhythmic oral way. Their aural/oral functioning testifies to the wide range of linguistic ability among "the deaf" in the school-age population alone.

Many state legislatures have interpreter laws that provide that all deaf persons appearing in state courts will have the legal right to a qualified interpreter. The current focus on the simultaneous or manual interpreter for all deaf and hard-of-hearing individuals focuses attention on the incomplete use of federal (taxpayers) dollars and denies an "appropriate" service to certain individuals with equal rights—the oral child, youth, and adult. An encouraging note is that in a recent amendment to the Maryland law, as reported by the National Center for Law and the Deaf in its *Newsletter*, Spring, 1976, all references to "deaf mutes" were deleted, and Oral Interpreters were authorized as a separate classification.

research evidence: modality preference

The research studies of Gates (1970), Goetzinger (1974), and Carson and Goetzinger (1975) furnish clear evidence of an oral modality preference among hearing-impaired youth and post-secondary students.

Data from two studies conducted at the National Technical Institute for the Deaf (NTID) provide clear evidence of the need for Oral Interpreters by certain undergraduate students.

Subtelny (1975) conducted a study to determine how well the 248 students who entered NTID in the summer of 1974 could receive information under optimal conditions when audition was the only mode of information reception. She reported that 25% of the students studied were able to understand most or all of the message given them by means of audition alone, using the CID Everyday Sentence Lists and selected spondee words. Another 49% of the entering students indicated by test data that they could understand most, if not all, the complete message by speechreading and listening.

In a separate study of the same population, Caccamise (1975), chairperson of the Manual Language Department of NTID, reported that 41% of the students lacked skills in receiving information through the manual code of expression. This information, coupled with the fact that "approximately 35% of entering students have elected to take the introductory course in simultaneous communication (under its old title of *Introduction to Manual Communication*) over the past two summers" indicates to the author that for a certain population within this and, indeed, any other educational setting at the post-secondary level, the need for a new support specialist, the Oral Interpreter, is evident.

Dr. Ross Stuckless, in response to a question about the availability of Oral Interpreters at NTID (during the Convention of American Instructors of the Deaf, Greensboro, North Carolina, July 1975), indicated that a number of oral students had requested provision of an oral interpreter until their proficiency in the new language of signs was accelerated. This was done.

legitimate questions—straight answers

Parents of oral deaf and hard-of-hearing children and youth have said, "My son/daughter can speak for himself/herself and can read nearly everyone's lips with ease. Why, if a person has excellent oral skills, are you suggesting a 'middle man'?"

The reasons will vary according to the setting. The scene may be a doctor's office, a large lecture hall at a university, a parent conference at school, job interviews, religious services, court cases (domestic/criminal), hospital, or certain modules of academic work in a high school or continuing education program. In any or all of these settings, speechreading, with or without aided hearing, may be difficult or impossible due to poor lighting, distance from the speaker, multiple-person conversation, or personal characteristics of the speaker ranging from a profusion of facial fuzz to an immobile upper lip.

Dr. George Fellendorf, executive director of the Alexander Graham Bell Association for the Deaf, wrote in support of a Senate bill (S. 1607) that related to the employment of interpreters for deaf employees. He drew attention to the fact that in lieu of or in addition to manual interpretation, many individuals need oral interpretation in order to function effectively in their jobs. At the Bell Association, for example, adult deaf persons are members of the Board of Directors and the Committees. Despite outstanding capabilities in speechreading and the use of residual hearing, they may need assistance in a group discussion or sometimes in highly technical discussions on a one-to-one basis. "We find this is best accomplished through the use of an oral interpreter," Dr. Fellendorf concluded. "We would like to suggest, therefore. . . . it be made clear that both oral interpreters and assistants, as well as those proficient in the use of signs, be employed to assist hearing-impaired individuals working in federal agencies."*

Individuals who may request an Oral Interpreter fall into two subclassifications:

Auditory/oral: any individual who receives his or her linguistic information primarily through the auditory channel, with or without amplification. This type of person will generally settle back, turn his or her hearing aid (if worn) to the desired volume, and listen to the speaker, while occasionally glancing at the Oral Interpreter. If the speaker turns away from the audience or someone asks a question out of hearing range, the Interpreter is useful temporarily. Here, the specialist's role is one of watchful waiting to supply cues when necessary (e.g. "A woman in the back of the room asked if the same play would be given again tomorrow night") in a checks-and-balance kind of supportive role.

Visual/oral: the person who relies on speechreading plus amplified hearing or speechreading alone is apt to turn off his or her hearing aid to circumvent the problem of a dual or garbled message (due to delayed feedback, if the hearing aid is turned on). Such a person needs the Oral Interpreter for group discussion situations and for audience situations where he or she is too far from the speaker to speechread easily.

THE ORAL INTERPRETER*

An Oral Interpreter is always a hearing person. At times he or she may function as a *translator*, presenting without voice (voiceless speech or mouthing) the exact language of the speaker and using a normal rate of speed and enunciation. At other times, the "middle man" will function as an *interpreter*, to paraphrase or explain what the speaker is saying, selecting phrases with higher visibility on the lips or synonyms that are more nearly a match to the communication ability of the person to whom the support is being given. The ability to act as a *reverse interpreter*, or translator, understanding the speech and/or mouthed or signed language of a hearing-impaired person and repeating it exactly or in essence for the benefit of another is a third dimension of competency that is essential for one who seeks formal recognition as an Oral Interpreter.

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*Letter to the Honorable Jennings Randolph, U.S. Senate, in reference to S. 1607, Employment of Reading Assistants for Blind Employees and Interpreters for Deaf Employees, January 6, 1976.

*This portion of this article is based in part on a presentation by Joseph Rosenstein, education program specialist, HEW Department of Education, in the section meeting on oral interpreting at the A.G. Bell Association Biennial Convention, June 1976, Boston, Massachusetts.

juxta (one to one)

A preliminary conversation with the hearing-impaired person is desirable to determine his or her general level of receptive and expressive language ability. The Interpreter may or may not use voice, according to the particular situation (e.g., in a social situation versus a lecture hall). During a "warm up session" the Oral Interpreter can ascertain a person's preference for unobtrusive or preferential seating and his planned use or disuse of a hearing aid. Ideally, an Oral Interpreter would have become familiar with the content of the topic at hand in advance, but this is not always possible. If the relationship between Interpreter and client is a sustained one, in the instance of a court case or high school/college class, an effective Interpreter will be fully aware of the particular interests of the student and his or her knowledge of the subject area, and will make adjustments accordingly. In all instances, the Interpreter must respect the authority of his or her position and the responsibility it carries to be friendly, yet not personal.

the group situation

In certain settings, a spotlight may be desirable, if the audience expresses such preference. The position of the Interpreter in reference to the group and the opportunity for a light exchange of conversation relating to the event at hand permits their orientation to the style and accompanying gestures of the specialists.

During the event, the audience may "tune out" the Oral Interpreter in a variety of ways. An overly heated room, lack of sleep the night before, or "lip-hypnosis" may lead some people to doze off, particularly if the feeling of weariness is reinforced by the dullness of the subject matter. The material may be delightful, yet some may "wool-gather" and actively turn their minds to matters of more relevance in their immediate environment. During intermission, a brisk walk or a few breaths of fresh air helps to get the body and attitudes back into shape so that the mind of Interpreter and recipient can function more effectively.

In any situation, the relationship between the hearing-impaired person(s) and the Interpreter is highly confidential and personal, requiring integrity and restraint. This means that an Interpreter, whether an oral or sign language specialist, should not function as a pseudo-authority on deafness or a self-appointed crusader for a particular method of communication (*oral* or *simultaneous*) for all deaf and hard-of-hearing persons.

personal characteristics

On any given occasion, the rule of "sweet reasonableness" should govern an Oral Interpreter's dress; that is, different clothes and jewelry would be worn for a banquet than a barbecue. However, the style and color (preferably plain) should always provide a suitable backdrop for an animated face and the natural body language that accompanies the voiceless translation or interpretation. Since oral individuals read the entire face for meaning of the spoken message, not just the lips, a beard and moustache can obscure some of the subtle cues furnished by the cheeks, chin, and dimples. In any case, they should be well trimmed to expose the lips generously and shaven, if the applicant expects preferrential treatment as a full-time Oral Interpreter. Lipstick in moderate amounts (some male interpreters wear brown tones) and occasional natural gestures to reinforce the meanings of words or phrases also add to comprehension on the part of the "listener." It is assumed that a person with an immobile upper lip or very thin lips would not be a choice candidate as an Oral Interpreter. Glasses should be removed at the request of the audience, whose wishes are paramount.

professional characteristics

The subtlety of phrasing and the literary style of the speaker are conveyed to the hearing-impaired person by more than voiceless speech. The Oral Interpreter makes full but natural use of facial expressions and body language to add a spontaneous animation that is desirable and very valuable to the "listener." For example, translation of the statement, "I couldn't care less," might be repeated with a toss of the head and lift of one shoulder.

In the smooth repetition of thoughts, a speaker's "er's" and "ah's" are usually eliminated. A certain kind of mind-training seems to occur among Oral Interpreters, which results in their automatically rephrasing a thought or sentence for higher visibility. For example, "He thinks he's the *king*" would be interpreted, "He thinks he's so important, just like a king." Natural gestures might be used to accompany the translated sentence, "I will never give in," with a sweep of the hand to the left, palm down, for added emphasis.

Since the speechreader's mind searches for the *gestalt* or essence of a thought conveyed in the more visible, contentive words of a sentence, the Oral Interpreter offers a synonym when a *homophene* (look alike) appears and needs translation. "He grabbed a bat and ran" would be paraphrased as "He grabbed a baseball bat and ran." Occasionally, a speaker pauses to reshuffle his papers or revise a statement. In this awkward moment of silence, the Oral Interpreter might say to the audience, "He's trying to find his place in the outline" or "The speaker is thinking . . . but not out loud." This offers a momentary oasis for the Oral Interpreter, who cannot retain much of another's spoken message when focusing on careful repetition of every word, phrase, and subtlety of meaning conveyed by the speaker. The process of listening to the spoken word (translating it immediately into voiceless speech while continuing the normal rate, flow, and rhythm of speech) does not permit the brain to absorb much of what is heard. The Interpreter will routinely direct the audience's attention to a change in speakers through a casual glance or gesture in the appropriate direction. Similarly, an Interpreter will be relieved by a "fresh replacement" during a lull in the event or after a prolonged period of time.

professional training and specialization

To date, there is no written set of standards for qualification as an Oral Interpreter, no available certification or accreditation and, therefore, no "Good Housekeeping Seal of Approval" that can be earned by individuals with certain personal and professional competencies who seek formal recognition as a generalist or specialist in the field of education, law, medicine, or industry or religious work.

A program of preservice and professional growth training should be based on as yet unidentified personal, professional, and conceptual competencies (skills, knowledge, techniques) agreed upon by a certifying body. In the judgment of the author, these would include clear, natural enunciation and fluency in the timing and style of transmission of a speaker's message. The ability to function as an *interpreter, translator,* and *reverse interpreter/translator* is central to the evolution of a professional Oral Interpreter. In addition, the Interpreter must be able to convey to the client a clear sense of trust and respect for his or her wishes. Services should be tailored to the client's particular level of oral communication skills.

Preservice training and course content would include the following items in an open-ended list: 1) the principles of lipreading and their application; 2) field experiences with oral deaf persons with a wide range of receptive and expressive communication skills; 3) role playing and simulated interviews in educational, business, legal, and social settings; 4) microteaching (audio-videotapes for self-improvement); 5) reverse interpreting experience; 6) student critique and evaluation by oral deaf youth and adults.

the Registry of Interpreters of the Deaf, Inc.

The vehicle for the training, certification, and advertisement of availability of Oral Interpreters in public schools, colleges and universities, and the adult world does exist. It is the Registry of Interpreters of the Deaf, Inc. (R.I.D.), founded in 1964 with support from the Vocational Rehabilitation Administration, U.S. Department of Health, Education, and Welfare. A grant from the Social Rehabilitation Services, submitted by the National Association of the Deaf, provided a variety of services to the budding organization until 1972. R.I.D. has a current membership of over 2,300 in 57 Chapters, operating in 43 states and the District of Columbia.

The identified roles and functions of R.I.D. can be expanded to accommodate to the added dimension of the support needed by oral deaf individuals, in the following ways:

1. give formal identification and position description of the additional specialist labeled an Oral Interpreter: role and function;
2. identify the competencies (knowledge, skills, techniques) to be acquired in successive levels of formal training and certification;
3. provide quality control of preservice and professional development training by delineation of the content of lectures, discussions, role playing, and observation/practicum experience at each level of professional/technical certification; and
4. give publicity to this new dimension of services to be available for oral youth and adults, as appropriate.

The present climate for exploratory discussion with representatives of R.I.D. is hospitable. At the 1976 Convention of the Alexander Graham Bell Association for the Deaf, held in Boston, the author was privileged to appear as a panelist addressing the topic: "Oral Interpreters: A Missing Link." In response to her presentation entitled, "The Case for Oral Interpreters," the president of R.I.D., Carl Kirchner, concluded his formal paper with the statement, "The R.I.D., Inc., expresses its willingness to work with the Alexander Graham Bell Association and its hearing-impaired members to establish a certificate for oral interpreting. Hopefully, with your help and guidance, such a certificate could be established. The R.I.D. stands ready and willing to serve."

The next move is up to us, as advocates for equal opportunities for all hearing-impaired children, youth, and adults who use speech and speechreading as their preferred means of communication.

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Senator **Schweiker**. Well, let me say I think that is a very constructive suggestion, and I assure you that we will do exactly that. I think we do need a broader legislative base and more specific legislative focus, and I will be introducing a bill to do that.

Of course, funding is something that I battle for in the Appropriations Committee, and I am going to continue that battle. But I think yiou are right; we do need a more specific and tangible legislative base within RSA. I assure you that I am going to put a bill in to do that.

Go ahead, Mr. Downey.

Mr. **Downey**. Senator, I appreciate this opportunity to testify, and I will try to make what has been a complex issue very brief, but I do want to bring it to your attention.

Everyone in this room and a lot of people around this country are extremely concerned about improving the quality of care to the hearing-impaired, but one Federal agency has retarded that improvement.

We also know that the hearing aid delivery system is an evolving one, with new relationships developing among physicians, among audiologists, and among hearing aid dispensers. But one agency has acted in a way to retard that evolution.

We also know that you do not go out and buy a $400 to $1,200 product without knowing whether you need it or not. But one Federal agency assumes that in the case of hearing aids, that is exactly appropriate.

We do know that in investigation after investigation that have been done over the last several years, and some that have been done——

Senator **Schweiker**. Which agency was that?

Mr. **Downey**. It is the Food and Drug Administration, Senator.

Senator **Schweiker**. And what is the problem here again?

Mr. **Downey**. You will recall the medical device amendments for which you were a cosponsor.

Senator **Schweiker**. Right.

Mr. **Downey**. They were designed to address the problem of making medical devices safe and effective. The FDA issued a regulation concerning hearing aids which went beyond making the device itself safe and effective, and has set up the pattern of delivery. That pattern has said that people should be referred to a physician for a medical examination, but that anyone 18 years of age or older can waive the medical examination for any reason whatsoever.

In addition, their regulation did not require that persons who are candidates for a hearing aid have their hearing tested. Now, many States have their own laws which were passed by concerned parents and legislative and consumer protection officials. Those State laws, in some cases, require medical evaluation, but restrict the waiver to only religious reasons, as opposed to any reason whatsoever.

Several of those laws also require that the candidates for a hearing aid have their hearing tested. In some States, it is by an otolaryngologist, the medical specialist, or by an audiologist, or, in some States, by whoever sells the hearing aid, such as New Jersey which says whoever sells it, whether it is a dealer, audiologist, or physician, must test hearing.

Now, the FDA has informed those States that their laws have been preempted. Those States have applied for an exemption from preemption, but the FDA, after hearing the evidence, has not made a final decision; they have indicated their intent not to grant those exemptions from preemption.

I do not believe, and I do not think you would believe, examining the evidence, that the FDA's reasons for this hold any water. They have said that they do not know if hearing tests are really of benefit, and there is tremendous documentation of the benefit of these tests.

They have said that they do not know if there are enough audiologists in some States for it, and States have demonstrated that there are.

Senator Schweiker. I understand what you are saying, and I will have my staff look into this. It is a very valid point.

Mr. Downey. Fine; we would appreciate that, Senator.

Senator Schweiker. Is that all you have?

Mr. Downey. Yes; I really just wanted to bring that problem to your attention.

Senator Schweiker. OK. Dr. Conlon?

Dr. Conlon. Thank you. The members of the Alexander Graham Bell Association of the Deaf appreciate this opportunity also.

Since 1890, when Alexander Graham Bell organized this association, its members have been concerned about and dedicated to acquiring, supporting, and advancing services for the hearing-impaired, both the deaf and the hard-of-hearing.

I, too, will take the liberty of selecting those items which perhaps give a little different twist to some of the things you have heard to this date.

For example, when considering programs for the hearing impaired, the major ingredient seems to be to have well-trained professionals available to identify, evaluate, and set forth individualized programs for rehabilitation for the persons with hearing impairment.

Included in this array of well-trained professionals is the audiologist, the speech language pathologist, the psychologist, the vocational rehabilitation counselor, the classroom teacher, and the social worker, to mention only a few.

Again, because of the complexity of hearing impairment, the physician may need to be the pediatrician or the physician specializing in the aged, the family physician, or the otolaryngologist. The audiologist may need to be the one in the veterans hospital, the community clinic, a public school, or at the university medical school neonatal clinic.

The speech language pathologist may need to be the one who has spent many hours in clinical practicum, studying and developing skills with the preschool hearing-impaired and their families. The classroom teacher may need to be at the high school level and know some of the quandaries which face adolescents in general and the hearing-impaired in particular.

The selective factor here is that there is need to have skilled professionals at every level of a citizen's life and in each corner of the United States.

Personnel preparation programs must be supported where model programs can be developed in training the many diverse professionals required to help persons with hearing handicaps. Model preparation programs would emphasize roles of physicians, audiologists, speech language pathologists, and classroom teachers working together.

Practicum sites would be made available where each individual scene would receive comprehensive evaluation and thorough rehabilitative services appropriate to that person's needs. Intercity populations, American Indians, and non-English-speaking citizens would be among those receiving assistance through those model training programs.

Without the development of knowledgeable professionals who are then employed in pivot places throughout the country to provide these services, it seems futile to speak of individual use of technology for or habilitation of the hearing-impaired in any great numbers.

If one of the objectives of programs for the hearing-impaired is to help them develop skills and knowledges normally, then several programs for the identification of children with hearing loss should be expanded.

One of these programs is the high-risk registry for new-borns. These high-risk registries are developed based on a child's birth and prenatal history. One or more characteristics determined by professionals indicate whether the child may have difficulty in developing normally.

To facilitate the development of appropriate programs for hearing-impaired children and youth in our schools, there is need to have consistent, well-thought-through programs which emphasize the identification, assessment, and habilitation of children with hearing handicaps.

Through the support of Public Law 94-142, these types of programs for the hearing-impaired are being developed throughout the country. Several modifications of procedures should speed the acquisition of these programs, however.

First, because of the stipulation within the law itself, children with several handicaps are listed only as having one handicap—usually, the handicap which seems the primary one for the child. Yet, it is not unusual to find children with such primary handicaps as mental retardation, emotional disturbance, and specific learning disabilities, having accompanying hearing loss.

Because these children are not counted as needing or receiving assistance for their hearing handicap, however, the child count for hearing handicaps can be lower than what one might expect throughout the country. This miscount, in turn, affects the financial support for the training and employment of well-qualified professionals to assist these children, and once again the hearing-impaired are minimally served.

Second, and in conjunction with the above, each State seems to employ a different system for tracking and tabulating which children are hard of hearing and which children are deaf. For example, there are some States in their child count for Public Law 94-142 which do not list hard-of-hearing children at all, while other States imply through their child count that there is a minimum of children who are deaf being served within the State.

It would seem beneficial if State education agencies could set up a system of reporting a hearing-impaired count of children. The report to the Federal Government, then, would convey a similar population from State to State. Because of the dissimilar profiles of the hearing-impaired child population, it is difficult to develop support appropriate for the programs for these children.

Third, and perhaps the major procedure to assist in solving the above disparities between States and even within given States, would be to suggest that a consultant for the hearing-impaired population, ages 0 through 21, be employed in each State education agency.

To pick up on one of the things in technology which I do not believe I have heard highlighted, we, too, are a firm believer in the loop system, the TTY's, and the vibratory and warning signals. I thought you should be alerted to one thing that Federal moneys have been assisting. Another support system for public settings is the oral interpreter.

For some years, interpreters for the hearing impaired have been certificated in manual interpreting for the deaf. Recently, to help provide compliance with Public Law 95-602, the Bureau of Education for the Handicapped, the St. Paul Technical and Vocational Institute, the Registry of Interpreters for the Deaf, the National Technical Institute for the Deaf, and the A. G. Bell Association supported, sponsored, and/or hosted the first workshop to certificate oral interpreters via the Registry for Interpreters of the Deaf procedures.

As the majority of hearing-impaired persons who require interpreters require oral interpreters, it is obvious that wherever interpreters are provided for public audiences, oral interpreters should also be available.

Senator SCHWEIKER. What does an oral interpreter do?

Dr. CONLON. An oral interpreter mouths to the listener what the speaker is saying and does not use signs. If I might be so bold, we have an outstanding oral interpreter with us at this moment, Dr. Rosenstein. He handles both forms of interpreting, as you can see, beautifully.

Senator SCHWEIKER. Well, I thank the panel very much for cooperating with their concise statements. We appreciate your testimony, and we will follow it up.

[The prepared statement of Dr. Conlon follows:]

SUBCOMMITTEE ON THE HANDICAPPED
Jennings Randolph
Chairman

Programs and Technology for the Hearing Impaired

Wednesday, February 6, 1980

Testimony By

Sara E. Conlon, Ph.D.

Alexander Graham Bell Association for the Deaf, Inc.

Washington, D. C.

.TFSTIMONY BEFORE THE SUBCOMMITTEE ON THE HANDICAPPED, Wednesday, February 6, 1980

SUBJECT: PROGRAMS AND TECHNOLOGY FOR THE HEARING IMPAIRED

PRESENTER: Sara E. Conlon, Ph.D., Executive Director, Alexander Graham Bell Association for the Deaf, Inc.

Introduction:

The Alexander Graham Bell Association for the Deaf wishes to express its appreciation for this opportunity to address the Subcommittee on the Handicapped concerning programs and technology for the hearing impaired (hard-of-hearing and deaf). The members of the A. G. Bell Association include adult hearing impaired, parents and grandparents of the hearing impaired, teachers, professors and other professionals. Since 1890, when Alexander Graham Bell organized the Association, its members have been concerned about and dedicated to acquiring, supporting, and advancing services for the hearing impaired.

Programs for the hearing impaired:

Studying the many dimensions of hearing impairments, their effects on human behavior, and how to design programs to modify these effects is to pursue one of the most complex subjects in habilitative sciences. Hearing is the primary way humans acquire their language. Any disruption in the normal process of hearing can have adverse effects on one's communication. These disruptions can occur at any time in a person's life, can be described as to severity, and be caused by many different factors, such as allergies, noise, disease, trauma, heredity. When the hearing loss occurs it can have different effects on an individual's life; what type of hearing loss aperson sustains may determine the prognosis for recovery, stabilization, or deterioration of the hearing impairment. Because of the diverse components which one must consider when discussing programs for the hearing impaired, selected factors of successful programming should be emphasized.

First, when considering programs for the hearing impaired, the major ingredient is to have well-trained professionals available to identify, evaluate, and set forth an individualized program for habilitation for the person with the hearing impairment. Included in this array of well-prepared professionals is the physician, the audiologist, the speech/language pathologist, the psychologist, the vocational rehabilitation couselor, the classroom teacher, the social worker, to mention only a few. Again, because of the complexity of hearing impairments, the physician may be the pediatrician, the physician specializing in the aged, the family physician, or the otolaryngologist; the audiologist may need to be the one at the Veteran's Hospital, the community clinic, a public school, or at the university medical school neonatal clinic; the speech/language pathologist may need to be the one who has spent many hours in clinical practicum studying and developing skills with the preschool hearing impaired and their families; the classroom teacher may need to be at the high school level and know some of the quandaries which face adolescents in general and the hearing impaired in particular.

The selected factor here is that there is need to have skilled professionals at every level of a citizen's life and in each corner of the United States. Personnel preparation programs must be supported where model programs can be developed in training the many diverse professionals required to help persons with hearing handicaps. Model preparation programs would emphasize roles of physicians, audiologists, speech/language pathologists, classroom teachers working together. Practicum sites would be made available where each individual seen would receive comprehensive evaluations and thorough habilitative service appropriate to the person's needs.

Inner city populations, American Indians, non-English speaking citizens would be among those receiving assistance through these model training programs. Without the development of knowledgeable professionals who are then employed in pivot places throughout the country to provide these services, it seems futile to speak of indivudal use of technology for or habilitation of the hearing impaired in any great number.

Closely akin to the preparation of well-trained professionals, is the need to research further such subjects as the effects of age on hearing, ways to prevent hearing loss in the very young, the effects of heredity on the incidence of hearing loss, the effects of drugs on hearing. Through research perhaps there are ways not only to prevent the majority of hearing impairments but also better ways to circumvent the negative effects the losses have on education, social and economic welfare of hearing handicapped persons.

If one of the objectives of programs for the hearing impaired is to help them develop skills and knowlege normally, then several programs for the identification of children with hearing loss should be expanded. One of these programs is the high risk registry for new-borns. These high risk registries are based on a child's birth and prenatal history. One or more characteristics determined by professionals indicate this: the child may have difficulty developing normally. The child is hearing monitored closely and if there are signs of hearing impairment, interventions may begin while the child is still below the age of six months. When assisting a child with a hearing loss, each day is of importance in capitalizing on the period in which the child should learn language and speech. Also, it is at this time that the family needs encouragement, direction, and positive assistance. The maintenance of a high risk registry in our hospitals should be supported.

To facilitate the development of appropriate programs for hearing impaired children and youth in our schools, there is need to have consistent, well-thought through programs which emphasize the identification, assessment and habilitation of children with hearing handicaps. Through the support of P.L. 95-142, these types of programs for the hearing impaired are being developed throughout the country. Several modifications of procedures should speed the acquisition of these programs, however.

First, because of a stipulation within the law itself, children with several handicaps are listed only as having one handicap, usually the handicap which seems the primary one for the child. Yet is is not unusual to find children with primary handicaps of mental retardation, emotional disturbance, specific learning disabilities having accompanying hearing loss. Because these children are not coutned as needing or receiving assistance for their hearing handicap, however, the child count for hearing handicaps can be lower than what one might expect throughout the country. This miscount, in turn, affects the financial support for the training and employment of well-qualified professionals to assist these children and, once again, the hearing impaired are minimally served.

Second, and in conjunction with the above, each state appears to employ different systems from its fellow states to tabulate which children are hard-of-hearing and which children are deaf. For example, there are some states in their child count for P.L. 95-142 which do not list hard-of-hearing children at all, while other states imply through their child count that there is a minimum of children who are deaf being served within the states. It would seem beneficial if state educational agencies could set up a system for reporting hearing-impaired count of children. The report to the Federal government then would convey a similar population from state to state. Because of the dissimilar profile from state to state of the hearing impaired child population it is difficult to develop and support appropriate programs for these children.

Third, and perhaps a major procedure to assist in solving the above disparity between states and even within a given state, would be to suggest that a consultant for the hearing impaired population, ages 0-21, be employed in each state education agency. The rationale here would be for the consultant to provide direction and leadership to programs for finding the hearing impaired children within the schools so that they are not overlooked or mislabelled. Through state leadership each child would be given an opportunity to develop through appropriate intervention. Also, the state consultant could design in-service education programs for teachers, administrators on the subject of hearing handicaps and their effects on the educational process, and the consultant could assist universities with providing appropriate programs for preparing skilled professionals.

A discussion of programs for the hearing impaired, 0-21 years of age, would not be complete without alerting vocational educators, career and guidance counselors and other analyze the individual talents and skills of each hearing impaired person and to caution against stereotyping people with hearing losses. Also, there is still the acoustical and lighting properties of facilities to inspect, and safety signals to maintain, and to provide appropriate technology which can assist the individual hearing impaired person throughout his or her life.

Technology for the Hearing Impaired:

As with programs of the hearing impaired, technology should be available to help the individual based on that individual need.

One of the major links with the world is the telephone. Depending upon the severity of hearing loss which an individual may exhibit, there are several modifications for the telephone which public offices should consider. First, is the amplification of sound as controlled by a dial on the telephone receiver and manipulated by the individual. Also, providing telephones which allows the user of a hearing aid with a telephone switch on it to have a direct connection with the telephone without any outside noise interference.

The teletypewriter (TTY) has become much more popular in public offices. The system allows the hearing impaired person to telephone typing to the receiving party who receives the message and responds in kind. Of importance here is that the costs for this transmission is higher than regular telephone use because the message takes longer to send; federal and state consideration should be given to reduced rates not only for the messages sent and received but for the cost of the equipment.

For public gatherings and depending upon the particular circumstance and requirement of the hearing-impaired individual, several systems are of assistance. First, the loop system consists of wiring at least part of the listening area with an electric system that transcues amplified speech into an electromagnetic signal. Persons with hearing aides which have a telephone switch can pick up the speaker's voice without the ambient noise around them.

Another support system in public settings is the oral interpreter. For some years, interpreters for the hearing impiared have been certificated in manual interpreting for the deaf. Recently, to help provide compliance with P.L. 95-602, the Bureau of Education for the Handicapped, the St. Paul Vocational and Technical Institute, the Registry of Interpreters for the Deaf (RID), the National Technical Institute for the Deaf, and the A. G. Bell Association supported, sponsored and/or hosted the first workshop to certificate oral interpreters via RID procedures. As the majority of hearing impaired persons who require interpreters, require oral interpreters, it is obvious that wherever interepreters are provided, for public audiences, oral interpreters are to be available.

Much more could be stated about the technology which is or should be available to the hearing impaired; for example, the application of technology toward lowering noise pollution and the unending vigilance needed to protect the public from the bombardment of damaging noise; the review and maintenance of standards for acoustical properties in public gathering places that optimum oral communication can exist not only for the hearing impaired but for those who depend upon the spoken word such as the visually handicapped; to further develop and disseminate standards and guidelines for warning signals in public places for the hearing impaired; to provide tax relief of communication systems designed for the hearing impaired such as the special television equipment to be used by the observer when viewing closed captioning television; to provide medicare assistance for hearing aids and batteries of the most complex hearing aid.

Suffice to say, persons with hearing impairments constitute our largest handicapped population. Without care and knowledgeable assistance, hearing impaired individuals can withdraw, be less productive, be less happy than our skills and technology should let them be. In the decade of the '80's there is reason to believe that the service programs and technologies available to us will be available to the hearing impaired.

Senator **Schweiker**. We are going to combine our third and fourth panels because of our time problem, so I am going to ask both our third and fourth panels to come up here together.

Before I do, I want to thank Dr. Giannini for being so patient this morning and for sitting through all these hearings. I give her very high marks for being interested in becoming better educated this morning. We appreciate your interest. I know you are busy like all of us are. I am sure you had other things to do, and we do appreciate your sitting through the hearing. We are almost done, so stick with us. Thank you.

Our next panel is two that we are combining: Mr. Albert Pimentel, director of the National Association of the Deaf, Silver Spring, Md.; Dr. Orin Cornett, cued speech program, Gallaudet College, Washington, D.C.; Mr. Ralph Borsodi, economic consultant, American Association of Retired Persons, and the National Retired Teachers Association, Washington; and Dr. George Fellendorf, president of the Consumers Organization for the Hearing-Impaired, and director of the National Information Center for Quiet, Washington, D.C.

I am probably going to have to limit you to about 3 minutes this time. We will call on you in the order that I just read, so, Al, if you will start out.

STATEMENT OF ALBERT T. PIMENTEL, DIRECTOR, NATIONAL ASSOCIATION OF THE DEAF, SILVER SPRING, MD.; R. ORIN CORNETT, PH. D., RESEARCH PROFESSOR AND DIRECTOR, CUED SPEECH PROGRAMS, GALLAUDET COLLEGE, WASHINGTON, D.C.; RALPH W. BORSODI, CONSULTING ECONOMIST, AMERICAN ASSOCIATION OF RETIRED PERSONS, AND NATIONAL RETIRED TEACHERS ASSOCIATION, WASHINGTON, D.C., ACCOMPANIED BY RONALD D. HAGEN, LEGISLATIVE REPRESENTATIVE; AND GEORGE W. FELLENDORF, ED. D., PRESIDENT, CONSUMERS ORGANIZATION FOR THE HEARING-IMPAIRED, INC., AND DIRECTOR, NATIONAL INFORMATION CENTER FOR QUIET, WASHINGTON, D.C., A PANEL

Mr. PIMENTEL. Thank you, Mr. Chairman. I am the executive director of the National Association of the Deaf, and I am a totally deaf person. With your permission, I will submit my testimony for the record.

Senator SCHWEIKER. That will be put in its entirety into the record.

Mr. PIMENTEL. I will just highlight six recommendations I have which are very brief, and hopefully I will stay within the 3-minute limit.

Mr. Chairman, the National Association of the Deaf would like to make the following recommendations: No. 1, that funds be earmarked in selected social service programs to assure services to the hearing-impaired population.

No. 2, that legislation be amended—Public Law 95-602, the Rehabilitation Act, is an example—to assure that an appropriately staffed office in the Federal Government attends specifically to the needs of the hearing impaired.

Senator SCHWEIKER. May I interrupt? I just want to say that I will introduce that legislation that you have just recommended. That is part of the bill that I will put in, to improve the Government's services for the hearing impaired.

Mr. PIMENTEL. Thank you.

No. 3, that the Environmental Protection Agency launch a more vigorous campaign to control noise pollution.

No. 4, that buildings and transportation systems be designed to include visual information systems to assure that directional and other information is accurately available to hearing-impaired persons. The Architectural and Transportation Barriers Compliance Board should include this need in their program.

No. 5, that Media Services and Captioned Films Division in the Bureau of Education for the Handicapped and the Public Broadcasting System expand their efforts to cover the needs of the hard of hearing.

No. 6, that a rehabilitation engineering center be established to focus specifically on the development of inexpensive devices and processes, including loop systems for hearing aid users, emergency warning devices for automobiles, and various alerting systems for private homes and apartments. It is our understanding that such a center has been a priority in HEW for several years, but no such center has yet materialized. This is difficult for us to understand or accept, given the magnitude of the problem.

Finally, the National Association of the Deaf would like to associate itself with the presentation made by Dr. Gene Del Polito of the American Speech-Language-Hearing Association, and especially with Mr. Rocky Stone of Self-Help for the Hard of Hearing. We want to associate ourselves with their presentations. Thank you.

Senator **SCHWEIKER**. Thank you. I will follow up your No. 6 recommendation too; I think that is a very good recommendation. Since I conduct hearings on appropriations for HEW, I will find out why the priority has not been higher on establishing a rehabilitation engineering center. It seems to me that that is exactly what we do need, and I will take that to my Appropriations Committee and ask them why and when.

Mr. **PIMENTEL**. Thank you very much.

[The prepared statement of Mr. Pimentel follows:]

Testimony Before the Senate Subcommittee on the Handicapped

Regarding

PUBLIC LAW 95-602

by

Albert T. Pimentel
Executive Director
National Association of the Deaf

February 6, 1980

Mr. Chairman, my name is Albert T. Pimentel. I am the Executive Director of the National Association of the Deaf, which is a consumer organization established in 1880. The NAD has a membership of 18,000, with 47 state affiliated organizations. Because there is no clear demarcation where hard of hearing ends and deafness begins, making the problems of both groups common in many areas of life, the National Association of the Deaf very much appreciates this opportunity to testify before this Committee on behalf of hearing impaired persons in this country.

Hearing loss is an invisible affliction that affects an estimated 15 to 20 million Americans. It is the largest single disability in the United States today. All evidence indicates that the numbers of hearing impaired citizens are growing and in the decades ahead they will increase at a more alarming rate. The primary reasons for this are age and noise pollution.

As the American population continues to live longer, more and more of us will experience hearing loss as a result of the aging process. More importantly, however, is the fact that as our environment becomes noisier each day, the hearing of literally thousands of individuals is being irreparably damaged.

Gradual loss of hearing is a very elusive problem. Often it begins so slowly it can go unnoticed. However, as the problem intensifies, it can change lives and cause serious emotional problems. Left untreated, gradual loss of hearing can ruin careers and destroy families. As one person stated, "ignored and unattended, it grows progressively worse and can eventually doom its victims to lives of depression and isolation."

Despite the terrible damage which hearing loss can cause to the individual and his family, most individuals who experience this problem are unwilling to admit it -- to themselves and others. The reasons for this are complex; however, a major cause is that we live in a youth-oriented society. People still tend to equate use of a hearing aid with old age.

Individuals who experience hearing loss are not always aware that it is their hearing that is deteriorating. They sometimes perceive the problem as one of losing alertness. Psychologically it is difficult for many people to deal with a changing physical condition, including the loss of hearing. Aside from those individuals who have difficulty confronting their problem, there are many who believe that there is little that can be done about their decrease in alertness and therefore do not seek assistance to remedy their problem. These persons have difficulty dealing with the fact that they have a legitimate physical disability, so their solution is often to ignore it and hope that it will go away. The failure of all hard of hearing individuals to unite and capitalize on their collective needs has resulted in a complete lack of services to them. Many existing programs could very easily meet the needs of hearing impaired persons by making only minor adjustments in their services. This is not occurring because there is no specific commitment in any area or level of government today to encourage greater awareness of the problems with delivery of services to these individuals.

Mr. Chairman, the National Association of the Deaf would make the following recommendations:

1. That funds be earmarked in selected social service programs to assure services to the hearing impaired population.

2. That legislation be amended, PL. 95-602 (The Rehabilitation Act) is an example, to assure that an appropriately staffed office in the federal government attends specifically to the needs of the hearing impaired.

3. That the Environmental Protection Agency launch a more vigorous campaign to control noise pollution.

4. That buildings and transportation systems be designed to include visual information systems to assure that directional and other information is accurately available to hearing impaired persons. The Architectural and Transportation Barriers Compliance Board should include this need in their program.

5. That Media Services and Captioned Films Division in the Bureau of Education for the Handicapped and the Public Broadcasting Service expand their efforts to cover the needs of the hard of hearing.

6. That a Rehabilitation Engineering Center be established to focus specifically on the development of inexpensive devices and processes, including loop systems for hearing aid users, emergency warning devices for automobiles and various alerting systems for private homes and apartments. (It is our understanding that such a center has been a priority in HEW for several years, but no such center has yet to materialize. This is difficult for us to understand or accept, given the magnitude of the problem.)

The incidence of hearing loss in our population will continue to become greater as Americans become older. The premature withdrawal of persons from participation in society due to hearing loss is unnecessary and a loss of human contribution to our nation. Because the problem is not one that threatens life, it has largely been ignored by our government. Its more pervasive effect can only be more clearly understood and appreciated when the problem strikes closer to home -- when a member of one's family is affected. Then the devastating effect on the personality of the individual and the depression that often accompanies hearing loss begins to affect the entire family. That clearly describes the severity of the problem that we are dealing with here today. Sensory handicapping conditions have long been recognized as being especially difficult to serve. Needless complications occur in vocational, employment, mental health, marital, and other family-related problems, which create an additional burden on the welfare rolls. This is an area of need where government investment will result in a positive return on dollars expended. It is time to give this problem attention. We are requesting appropriate and timely action.

Thank you.

Senator SCHWEIKER. Will the next witness go ahead?

Dr. CORNETT. Mr. Chairman, my name is Orin Cornett from Gallaudet College. I want to call to your attention, briefly, three technological applications that I believe to be of great potential importance to hearing-impaired persons.

The first is the short-range wireless system of radio hearing aid that utilizes localized induction field transmission. This is a new development, developed in Australia, described in the February-March 1979 issue of the Volta Review. It was demonstrated in my laboratory during the summer of 1979.

The important aspect of this is that the 1979 World Administrative Radio Conference, recognizing the advantages of this system, has accepted Australia's proposal for a worldwide channel for FM induction field wireless hearing aids. So it is urgently important that Federal support be generated for extensive U. S. participation in the testing and evaluation of this system and making arrangements for its broad availability.

The second technological application I wish to discuss is in the area of speech-reading aids. Since 1969, I have been working on the idea of a wearable speech analyzing-lip reading aid, based on the principles of cued speech. In 1971, I was joined in this effort by Mr. Robert Beadles, a senior engineer at the Research Triangle Institute in Durham, N.C., and we have been collaborating since that time.

Currently, that organization has a 3-year contract with the National Aeronautics and Space Agency, with Gallaudet as a subcontractor for testing and evaluation in the amount of $550,000. The contract calls for the miniaturization of the device and its field testing on 30 or more subjects in one year.

It is important that the National Aeronautics and Space Agency, with whom this contract was closed, is providing support. The Prosthetics Engineering Unit of the Veterans Administration is sharing in this support. The National Institutes of Health, the National Science Foundation, and the Bureau of Education of the Handicapped are participating in an advisory capacity.

This device is designed to provide to the deaf wearer the equivalent of the cues of manually cued speech, operating automatically from the sound of the speaker's voice. I call this to your attention simply because when the field test is completed, it will be important to arrange, if the field test is successful enough, for the widespread availability of this or any further testing that is needed. The project is on course and is succeeding at this time.

The third technological application I wish to mention has to do with hearing aid design. If eyeglasses were made as hearing aids are designed today, they would correct only for myopia and hypermetropia, not for astigmatism.

Hearing aids are designed to amplify and correct to some degree for frequency distortions, but not for amplitude distortion, also called harmonic distortion or nonlinear distortion. It is this factor, I am sure, that is responsible for the failure of many children to make good use of their hearing, when another child with the same audiogram performs beautifully.

Two years ago, I developed a conceptual design for a hearing aid which can compensate for this nonlinear distortion. As conceived, it will work only if the nonlinearity is independent of frequency. If it depends on frequency, it will require a tiny digital computer, a single chip, to correct the nonlinearity.

I concur in your statement that hearing aid design is far behind the times, and this is one of the advances that needs to be made, because there are many hard-of-hearing or deaf persons with muddled auditory sensations caused by nonlinear distortion.

May I make one comment on the induction loop because of the importance that has been given to it today? There are many variations of this, from a very small loop to a loop that encloses a whole home. I have helped people design a loop to enclose their entire home, so that if the other people in the family wear a radio microphone, they may communicate to the hearing-impaired person anywhere in the house.

Over 150 families with hearing-impaired children have made themselves a small induction loop, 13 inches in diameter and a half an inch thick, to plug into the back of the TV set so that the hearing-impaired child can pick up a clear signal. They have done this themselves, with only the cost of the materials, from a design I made 11 years ago. There are many variations of this.

These small induction loops have been available in Australia for 15 years, where hearing aids are furnished by the Government, and maintained. Ten years ago when I was in Australia, those hearing aids cost the Government $27.50 each, and they were good hearing aids.

We need, in this country, to have some impact upon the problem that keeps so many potential devices from coming to fruition, because the population they can serve is not large enough to constitute a market that will entice industry. In my written testimony, I have given examples of devices that are feasible but are just not attractive to industry. Unless the cost of research and development get them to a level at which they can be manufactured and sold profitably, they are not going to benefit the hearing-impaired. Thank you, Mr. Chairman.

Senator **Schweiker**. Let me just ask a question. Have any of the hearing aid companies expressed any interest in your third technological application?

Dr. **Cornett**. I have not communicated with them about it, because at this point basic research is needed to prove the feasibility. As I said, this is a conceptual design; it has never been produced. Therefore, what is needed is research on this concept which will establish the feasibility of it and settle the question of whether it can be a simple design or whether it must have a digital computer as part of the instrument.

At this stage, it is just a concept. It is an example, though, of an area in which there is promise, and the promise should be investigated. It would better be attacked by specific proposals to a Government agency for funds to do research on this, rather than with the hearing aid companies at this time, judging by the experience of the past.

Senator **Schweiker**. Would a rehabilitation engineering center, such as proposed by Mr. Pimentel, be helpful?

Dr. **Cornett**. That would be an ideal place for this to be investigated.

Senator **Schweiker**. It seems like you have some very constructive suggestions here that have some technological potential and possibilities.

I gather you are proving out yourself on No. 2 now. Is that right?

Dr. **Cornett**. Yes. That project is underway and fully funded, so there is no immediate need, except to be alert to the probability that at the end of the 3 years, there will be a device that may be of great importance.

Senator **Schweiker**. I am not sure I understand the first one, the VHF-FM radio hearing aid. How does that work?

Dr. **Cornett**. It uses the unique properties of a radio spectrum in the neighborhood of three megahertz, in which the induction component of the field of the radio transmitter drops off very rapidly. Mr. Burgess and his associates, by using a small ferrite core antenna, have kept the radiation field to a minimum. The radiation field is the one that goes a long distance; it drops off with the square of the distance. The induction field drops off with the cube of the distance.

In the demonstration, Mr. Burgess and his wife were at opposite sides of the three-room suite that we occupy at Gallaudet, and I was in the room in between. If I moved toward the doorway of the room in which he was, I could hear him clearly; if I moved toward the other door, I heard her, and yet they were on the same channel.

The trouble with the radio frequency hearing aids that we have today is that there is a lot of interference, produced both by the radio hearing aids and picked up by them. Also, there is cross-interference between them, so that several induction field channels may be necessary in a school, for example.

The induction-field approach makes it possible to have a single channel. For example, in a given family, a deaf child could hear the father and the mother separately on the same channel. It is an established fact that the work has been done; now it needs widespread evaluation.

The exciting thing is that if we can get this worldwide channel set up for radio hearing aids, then a lot of the problems of interference and the problems of cost will be solved also. With the single channel, radio hearing aids can be much less expensive and more useful.

Senator **Schweiker**. You have been a leader in the cued speech field; I realize that. How many teachers have you trained in cued speech?

Dr. **Cornett**. I really do not know; many hundreds, maybe a few thousand. Surprisingly, I can give you a more accurate figure on foreign countries than I can here. There are about 1,000 people cuing in England; there are a couple of hundred in France. The method is used in about 150 places in the United States that we know about.

But, now, you understand that my reference was to an electronic device based on the principles of manually cued speech. It was not the cued speech itself that I was referring to.

[The prepared statement of Dr. Cornett follows:]

TESTIMONY OF

R. Orin Cornett, Ph.D.
Research Professor and Director of Cued Speech Programs
Gallaudet College

before the

U. S. SENATE COMMITTEE ON THE HANDICAPPED

February 6, 1980

Testimony of R. Orin Cornett, Ph.D.

February 6, 1980

Mr. Chairman, Members of the Senate Subcommittee on the Handicapped, Ladies and Gentlemen:

My name is Orin Cornett. I am Research Professor and Director of Cued Speech Programs at Gallaudet College. From 1965 through 1975 I served as Vice President for Planning at the College.

Today I will call to your attention three technological applications I believe to be of great potential importance to hearing-impaired persons. One is essentially complete, resulting in a specific device already widely tested and available. The second is well along, scheduled for field testing in 1981-82. The third is only at the conceptual stage, awaiting extended research and development.

The February-March 1979 issue of the Volta Review contained an article entitled "Radio Frequency Hearing Aids: The Need for Complementary and Compatible Channel Allocation," by Burgess, Christen, Donald, and Lowe.

This article points out that conventional hearing aids fail to achieve adequate signal-to-noise ratios in many situations. It also points out that VHF-FM radio hearing aid systems remedy the problem, but encounter and create serious interference problems.

During the summer of 1979, Mr. Burgess and his wife, in my laboratory, demonstrated a short-range wireless system utilizing localized induction-field transmission. It overcomes the problem of interference and makes possible single-channel operation under almost all conditions. I was particularly interested in the technical details of this system because in 1935 I was doing research on the specific properties of the induction and radiation components of the electromagnetic field in radio transmission that make it possible. Mr. Burgess and his associates have made use of the rapid decay (with the cube of the distance) of the induction field and the reduction of the radiation field when a small ferrite-core antenna is used.

Not the least advantage of use of this part of the spectrum (near 3 megahertz) for FM radio hearing aids is the fact that it is one of the least desirable parts of the spectrum for conventional radio communication.

The 1979 World Administrative Radio Conference, recognizing the advantages mentioned, has accepted Australia's proposal for a world-wide channel for FM induction-field wireless hearing aids. It is now urgently important that Federal support be generated for extensive United States participation in the testing and evaluation of this system and in making arrangements for its broad availability. Technical and other information, including arrangements for licensing for manufacture, can be obtained from Mr. Victor Burgess, CIRO Division of Applied Physics, P. O. Box 218, Lindfield, NSW 2070 Australia.

The second technological application I wish to discuss is in the area of speechreading aids. Since 1969 I have been working on the idea of a wearable speech-analyzing lipreading aid based on the principles of Cued Speech. In 1971 I was joined in this effort by Mr. Robert Beadles, a senior engineer at the Research Triangle Institute, Durham, North Carolina. Since 1971 Gallaudet College and the Research Triangle Institute have collaborated in research and development activities aimed at production and field testing of a wearable device. A Gallaudet contract with the National Institutes of Neurological and Communication Disorders and Stroke for a project carried out in 1973, 1974 and 1975 evaluated the feasibility of such a device, with the Research Triangle Institute serving as subcontractor for the electronic development. Currently RTI has a three-year contract with the National Aeronautics and Space Agency, with Gallaudet as subcontractor for testing and evaluation, in the amount of $550,000. This contract calls for the miniaturization of the device and its field-testing on 30 or more subjects for one year. The Prosthetics Engineering Unit of the Veterans Administration is sharing in the support of this project, while the National Institutes of Health, National Science Foundation and Bureau of Education of the Handicapped are acting in an advisory capacity.

The Autocuer, as the device is called, is designed to provide to the deaf wearer the equivalent of the cues of manually Cued Speech, operating automatically from the sound of the speaker's voice. The cues are seen as a virtual image in the air, approximately four feet in front of the wearer, who can by positioning his head place the cues on the face of the speaker, near the lips. It is anticipated that the field-test model will be between the size of a package of cigarettes and the size of a small book, and that the production model produced subsequently (microcomputer and all) will be in the bows of the wearer's glasses. The Autocuer utilizes a microphone-generated signal which is filtered, preshaped and delivered to a computer, which samples five parameters 12,500 times per second and sums them each ten milliseconds. It uses the resulting data to segment the speech string into phonemes, assign them to cue groups, and drive the display in real time, approximately 150 milliseconds behind the sound pattern. Over a period of five years 85 college students and 7 middle-aged to elderly persons have been trained and tested. The group of 15 students trained during the current school year required an average of only 13 1/3 hours to become able to decode consonant-vowel syllables as accurately through vision alone, as normal hearing persons can through audition.

If only moderately successful (in terms of accuracy, reliability, etc.) the Autocuer will make life a lot simpler and easier for the speaking deaf person who wishes to function in the hearing world for an appreciable part of his time. If it is completely successful, it will essentially liberate those deaf persons who have nothing wrong with them except deafness, from their severe limitations in communication with hearing people.

It should be emphasized that many problems remain to be solved, but that the results obtained thus far in the development of this instrument are extremely encouraging. When the field test is completed in 1982, and it is apparent that the Autocuer can substantially improve the lot of the hearing-impaired, the Subcommittee on the Handicapped will certainly be asked to give attention to ways and means of making it widely available.

The third technological application I wish to discuss has to do with hearing-aid design. If eyeglasses were made as hearing aids are designed today, they would correct only for myopia and hypermetropia, not for astigmatism. Hearing aids are designed to amplify and to correct to some degree for frequency distortion, but not for amplitude distortion, called also harmonic distortion (because it introduces spurious harmonics into the auditory sensation), or nonlinear distortion.

Those who work with hearing-impaired children are continually puzzled by the great differences in use of hearing among children with essentially identical audiograms. Some children make good use of a minimal amount of hearing; others make poor use of a substantial amount of hearing. Nonlinear distortion is responsible for the masking of high-frequency sounds by low-frequency sounds, present to some extent in the normal ear, but much more prevalent in the hearing-impaired.

Two years ago I developed a conceptual design for a hearing aid which can compensate for nonlinear distortion. As conceived, it will work only if the nonlinearity of the ear is largely independent of frequency. If the nonlinearity varies with frequency, it would be necessary to change the design to utilize a tiny digital computer (a single chip) to correct the nonlinearity.

The state of technology today is such that hearing aids capable of clearing up the hearing of many hard-of-hearing or deaf persons with "muddled" auditory sensations is not only possible, but could be achieved with only modest effort and investment.

I wish to close with a few general observations on the relationship of technology to the needs of the hearing-impaired. A good many devices have been developed to improve the quality of life of the hearing-impaired. Most notable, of course, is the hearing aid. Others include the modem which made it possible for the hearing-impaired, even the totally deaf, to communicate via telephone; the radio warning device which enables hearing-impaired parents to respond to a crying baby; the simple "door-light" which replaces a conventional doorbell; the increasingly popular induction loop; and the strobe-light fire alarm used in the dormitories at Gallaudet College and the National Technical Institute for the Deaf. All of these protect or enhance the safety of the hearing-impaired person, serve his convenience, or even basically improve his quality of life. Unfortunately, such devices represent all too small a fraction of those needed and possible. The reason is that devices for the hearing-impaired rarely provide market opportunities obvious enough or large enough to induce industry to invest the requisite amounts in their development. The market is not large and its members average well below the general population in income.

May I give an example. Seven or eight years ago I conceived the idea of a wrist watch size device which would provide a vibrator stimulus to a hearing-impaired child when his mother sounded an inaudible supersonic whistle. This would make it possible to call the child at a distance of several hundred yards, or warn him not to wander too far away. A local engineering firm did some preliminary work on the idea, judged it feasible, but dropped it on the basis of probable development costs versus estimated market potential.

A step down from the preceding in probability of development is a similar device for enabling a hearing-impaired player to feel the referee's whistle at a basketball game.

In most cases, such devices could be marketed profitably, though not on a grand scale, if development and tooling-up costs were subsidized. This is the only way the needs of the hearing-impaired will be served adequately. They do not constitute a sufficiently large and affluent market to attract the efforts of industry and business to many of their needs.

A careful study of all possible devices of apparent promise should be made and a program planned to provide stimulus and support for the research and development costs required to make them marketable on a basis reasonably attractive to industry.

Senator **SCHWEIKER**. Thank you very much. Mr. Borsodi?

Mr. **BORSODI**. I am Ralph W. Borsodi, consulting economist for the 12.5 million member National Retired Teachers Association and American Association of Retired Persons. I am a resident of Greencastle, Pa. I am accompanied today by Ronald D. Hagen, one of our legislative representatives.

We appreciate this opportunity to present our views on the subject of programs and technology for the hearing impaired, and especially the elderly hearing impaired. We will submit a lenghthier statement for the record.

Clearly, hearing impairments are a major community health problem affecting persons of all ages. In fact, hearing problems are the most frequent basis of physical impairment in the country. Age-associated hearing impairments are particularly noteworthy due to their relatively greater incidence among the rapidly growing elderly segment of our population.

Yet, appropriate attention has not been given to the health care needs of the hearing-impaired elderly, most likely because hearing loss is not a direct cause of death or deemed a serious illness. However, this ignores the magnitude and socioeconomic impact of hearing disorders on the quality of life of the aged and the fact that the primary goal of the Congress in enacting, and subsequently improving, medicare, as well as other public health and insurance programs, has been to make needed improvements in this regard.

Health interviews and audiometric surveys clearly indicate a significantly greater prevalence of hearing impairments in older persons, and particularly in males. Prevalence rises generally with age and increases steeply over the age of 60.

While only 7.6 percent of the population had hearing impairments in 1977, a full 29.3, or 6.5 million people age 65 and over suffer such impairment.

Older persons commonly have multiple physical, psychological and social problems, the interaction of which can complicate the management and treatment of such conditions as hearing loss. Moreover, an elderly person beset by economic difficulties or the loss of a spouse may have little motivation to seek out auditory testing and rehabilitation. Even worse, an older person fighting chronic illness may adopt the attitude that efforts to improve his or her hearing are not important.

Surveys of elderly families show that in ranking various health problems, hearing loss is more objectionable than such problems as incontinence or mental impairment.

In the past, there has been too little attention given to the rehabilitative needs of the elderly. This has been a reflection of an attitude that such conditions as a hearing impairment are irreversible and part of the normal aging process.

For the hearing-impaired elderly, it can be very difficult to gain access to important health and social services. It is even more difficult where the individual is reticent in admitting that he or she has a hearing problem. In addition, an older person's hearing difficulties may be misinterpreted as a sign of senility.

For those persons with medically incorrectable hearing loss, hearing aids are an essential part of their rehabilitation. Yet, many elderly people forego hearing aid use because they cannot afford them, despite the fact that roughly half of all people who have bilateral hearing impairment are elderly.

A large share of the estimated 650,000 hearing aids sold annually are purchased by the elderly. Total expenditures in 1978 were approximately $250 million. The elderly not only need aids with good performance characteristics, but devices that can be easily inserted and controlled by individuals with multiple disabilities; for example, arthritis.

For older Americans who are most often on fixed incomes and facing high health care costs, no assistance is available for this highly predominant affliction. Medicare does not cover the cost of hearing aids, nor, in most instances, the services of a physician or audiologist. With the average price of a hearing aid being about $350, this can be a significant expense for many older persons.

Our associations believe that the proposed trade regulation rule and staff report of the Federal Trade Commission for the sale of hearing aids is a significant and positive development. We strongly endorse the FTC staff recommendations concerning the buyer's right to cancel within 30 days. Such a 30-day trial period should allow the purchaser enough time to wear the aid in a representative variety of actual use situations and determine whether significant new or additional benefits are being received.

Senator **Schweiker**. Mr. Borsodi, I have to chair another hearing; so we will have to move on to another witness. I am sorry.

Mr. **Borsodi**. Pardon?

Senator **Schweiker**. I have to go chair a National Institutes of Health appropriations hearing this afternoon, and I do not want to cut our last witness short. Let us put your whole statement in the record, and we will go on to our final witness.

[The prepared statement of Mr. Borsodi follows:]

STATEMENT

Of the

NATIONAL RETIRED TEACHERS ASSOCIATION

and the

AMERICAN ASSOCIATION OF RETIRED PERSONS

before the

COMMITTEE ON LABOR AND HUMAN RESOURCES
SUBCOMMITTEE ON THE HANDICAPPED

February 6, 1980

Mr. Chairman:

I am Ralph W. Borsodi, Consulting Economist for the 12.5 million member National Retired Teachers Association/American Association of Retired Persons. I am accompanied today by Ronald D. Hagen, one of our Legislative Representatives. We appreciate having this opportunity to present our views on the subject of programs and technology for the hearing impaired, especially the elderly hearing impaired. We commend the Subcommittee on the Handicapped for conducting this hearing and addressing an area of great concern to our nation's elderly citizens.

While other witnesses appearing before this subcommittee will undoubtedly discuss in detailed and highly technical terms various programs and activities which assist hearing impaired Americans, we would like to narrow the focus of our comments to the specific problems of elderly hearing impaired individuals and at the same time discuss current research in this area as well as a number of other public policy concerns.

Overview and Background

Clearly, hearing impairments are a major community health problem affecting persons of all ages. In fact, hearing problems are the most frequent cause of physical impairment in this country. In this regard, age associated hearing impairments are particularly noteworthy due to their relatively greater incidence and more profound repercussions among this rapidly growing segment of our population. Yet, appropriate attention has not been given to the health care needs of the hearing impaired elderly -- most likely because hearing loss is not a direct cause of death or serious illness. However, this ignores the magnitude and socioeconomic impact of hearing disorders on the quality of life of the aged and the fact that the primary goal of the Congress in enacting (and subsequently improving) Medicare as well as other public health and insurance programs has been to make needed improvements in this regard.

Experts define hearing impairment-through audiometric surveys of the civilian, noninstitutionalized population-as the presence of elevated hearing levels for speech in the better ear. The vast majority of persons with hearing problems are not deaf but have varying degrees of difficulty in understanding speech. Health interviews and audiometric surveys clearly indicate a significantly greater prevalence of hearing impairments in older persons and in males. Prevalence rises gradually with age and increases steeply over the age of 60. This is especially noteworthy given present demographic trends. Whereas in 1977 there were only 23 million (10.8%) Americans over the age of 65, by the year 2025 this age group will number 51 million and constitute between 17 and 21% of our total population. While only 7.6% of the population have hearing impairments (1977), a full 29.3% or 6.5 million people age 65 and over suffer such impairment. In addition, nearly half of those 75 and over have identifiable hearing impairments. As high as these numbers may seem, even these are most likely understated due to the general reluctance on the part of older persons to admit to having a hearing problem or by a genuine lack of awareness of the existence of a hearing problem on the part of the elderly individual. Indeed, such problems of attitude and awareness make it most difficult to accurately survey or interview this target population and will likely continue to result in the under reporting of this impairment among the aged.

There is very little in the way of epidemiologic data on the hearing impaired elderly. Most studies have obtained information only on the number of elderly persons with hearing impairments and have not yielded useful information on the etiology or severity of the problem. The majority of hearing disorders among the elderly are, however, chronic conditions and the exact date of onset is often difficult to ascertain. Presbycusis, a term with numerous definitions, generally refers to hearing loss that is attributable to aging alone. As a condition, it includes at least four different types of auditory defects and is broadly the result of a relatively slow and general deterioration of the hearing process. Presbycusis is often a "diagnosis of last resort", and while the causal factors are largely unknown, many experts believe it to be the product of an intergration of insults to the ear -- noise, drugs, infectious diseases, certain genetic characteristics and time. While the onset is usually gradual, it is an affliction which is above all else common, frustrating, incomprehensible and unpredictable. Together with other chronic physical ailments and impairments that older Americans suffer, this condition seems to take on a synergistic momentum all its own with one problem contributing to or feeding on another, e.g. arthritis, diabetics, sight impairment, strokes, etc . Without doubt, there is a need for much greater distinction among the disorders included within presbycusis and further study of the mechanisms associated with each. A typology of hearing loss in old age needs to be developed.

Social and Psychological Problems Associated With Hearing Impairment

Older persons commonly have multiple physical, psychological and social problems, the interaction of which can complicate the management and treatment of such conditions as hearing loss. Psychologically, an older person who has been very active and vigorous may well react to the discovery that he or she is not hearing well by becoming uncertain of themselves and pulling away from people. Moreover, an elderly person beset by economic difficulties or the loss of a spouse may have little motivation to seek out auditory testing and rehabilitation. Also, victims of such debilitating conditions as strokes or arthritis may find the simple placement and adjustment of a hearing aid or earmold difficult if not impossible. Even worse, an older person fighting serious illness (e.g. cancer, heart disease) may adopt the attitude that efforts to improve his or her hearing are relatively unimportant.

Undoubtedly, the loneliness, depression and isolation associated with defective hearing in an elderly individual can leave an older person very vulnerable to crime and fraud. It can also severely effect the quality of an older person's life, specifically by reducing his employment prospects. While it is difficult for such an aged individual to secure suitable employment in the first place, once a job is obtained, a hearing impaired older person may refuse to wear a hearing aid or prostheses out of fear of losing his or her job.

Surveys of elderly families show that in ranking various health problems hearing loss is more objectionable than such problems as incontinence or mental impairment. Furthermore, hearing loss places the elderly in greater risk of institutionalization. In this respect, a measurement of the extent of hearing impairment among nursing home residents is contained in the most recent national Nursing Home Survey (1977). According to this survey, 32.2% of the nursing home population is hearing impaired and 1% have complete hearing loss. An estimated 75,900 (or 5.8%) of nursing home residents use a hearing aid. Still, much of this reported useage is inconsistent and there is a need to educate nursing home attendants as to the need to encourage the use of these aids.

As we have noted, the hearing impaired older person is both handicapped and at the same time coping with numerous other changes in his life. There often is a general lack of assertiveness on the part of the hearing impaired aged as well as a feeling that breakdowns in communication are their fault. Yet we still lack data on the effect of hearing impairment on the general health of the elderly as well as the impact of this impairment on self-image, psychological status, family relations, economic well-being, resilience to loss and response to stress.

Rehabilitation

In the past there has been too little attention given to the rehabilitative needs of the elderly. This has been a reflection of an attitude that such conditions as a hearing impairment are irreversible and part of the normal aging process. Through a heightened interest in geriatrics and certain public policy initiatives we are only now starting to counter this attitude and effectively deliver rehabilitative services to our elderly.

Before we discuss rehabilitation of the hearing impaired elderly we need to generally summarize the causes of this condition. Presbycusis, or hearing disorders that characteristically occur in old age, can be the result of: the cumulative effect of medication; noise (occupational or recreational exposures); the onset of any number of chronic conditions (e.g. cardiovascular disease or diabetes); or merely time.

More common in elderly men than women, individuals with this condition suffer not only reduced hearing sensitivity but also a reduction in their ability to discriminate and interpret speech, tolerate loud sounds and appreciate music or a variety of other pleasant auditory experiences. Our elderly citizens should especially be aware of the cumulative effect of medications they are taking for other conditions on their hearing. Aspirin, some antibiotics, certain diuretics, anti-cancer agents and other medications are known to have potentially otological effects. This is particularly significant for the aged since those over the age of 65, while representing only 11% of our population, consume 25% of all prescription drugs that are sold.

The deaf comprise only 10% of all hearing impaired persons, yet those people who suffer the loss of even part of their hearing lose part of their ability to interact and communicate with those around them. For the elderly especially, it can be very difficult to access important health and social services. This is even more difficult where the individual is reticent in admitting that he or she has a hearing problem. In addition, an older persons's hearing difficulties may be misinterpreted as a sign of senility and place them at risk of institutionalization. Generally misunderstood or misinterpreted behavior on the part of the hearing impaired elderly make it easier for others to ignore or discount their special needs and problems.

In testing and evaluating the hearing problems of older persons it is necessary to realize that not all normal testing procedures are appropriate for this group. Acoustic reflex testing, for example, may be useful for younger persons but not yield accurate results when used on the elderly. Special measures often need to be taken to distinguish between hearing loss and cognitive impairment in elderly individuals who are severely disabled. Also, in interpreting the results of hearing tests, evaluators need to be aware of the tendency of older persons to be more cautious in test situations than younger persons. Just as the ability to perform coordinated movement declines faster with age than does muscular strength, so too the ability to understand speech often diminishes more rapidly than does the perception of sound.

For those persons with medically incorrectable hearing loss (a large majority of the hearing impaired), hearing aids are an essential part of their rehabilitation. Yet many elderly people forego hearing aid use because they cannot afford them - despite the fact that roughly half of all people who have bilateral hearing impairment are elderly. This is indeed unfortunate since it is precisely at this stage of life that it is most necessary for the elderly to maintain optimal communication links with society.

A large share of the estimated 650,000 hearing aids sold annually are purchased by the elderly. Total expenditures in 1978 were approximately $250-300M. There remain, however, a number of serious problems in hearing aid useage among the elderly. The optimal model should at the very least be: (1) simple - with a few switches that are easy to move; (2) have a battery which is easy to remove and replace; (3) be properly fitted so as not to irritate the skin; (4) have a noise suppressor switch; and (5) have an automatic volume control. Therefore, the elderly need not only aids with good performance characteristics but devices that can be easily inserted and controlled by individuals with multiple disabilities, for example arthritis. In some instances, in-the-ear models may be preferable for cosmetic reasons since the elderly are sometimes embarrassed about their hearing loss and the fact that it may be symptomatic of generally failing health. Whereas price and cosmetic appeal may be regulating factors in the selection of an aid, among the hearing impaired elderly a tradeoff sometimes needs to be made between the "best" hearing aid and one that will actually be worn.

For the hearing impaired elderly, who are most often on fixed incomes and facing high health care costs, no assistance is available for this highly predominant affliction. Medicare does not cover the cost of hearing aids nor in most instances the services of a physician or audiologist. Private insurers who often look to the federal government as a model for their benefit structure also for the most part do not cover hearing aid purchases and related hearing aid services. The average price of a hearing aid is about $350 with batteries costing an average $12-15 a year.

Our Associations believe that the proposed Trade Regulation Rule and staff report of the Federal Trade Commission (FTC) for the sale of hearing aids is a significant and positive development. Our only regret is that it has been four and one-half years since the action was first proposed and we have not yet seen a final rule promulgated. Specifically, we strongly endorse the FTC staff's recommendations concerning the buyers right to cancel within 30 days and the requisite for an oral explanation of this right. The proposed 30-day trial period should allow the purchaser enough time to wear the aid in a representative variety of actual use situations and determine whether significant new or additional benefits are being received. While the Commissioners have yet to complete final action on this proposed rule, we would also favor those provisions in the staff recommendations that would require all sellers of aids to identify themselves as such. At the very least, all written advertising should be regulated so as to prevent false or misleading claims regarding the performance of a hearing aid. And importantly, this rule should only supersede those State laws and regulations that do not provide consumers with equal or greater protection. We believe that the acquisition of a hearing aid should be handled in much the same fashion as eyeglasses. By requiring consultation prior to the purchase of a hearing aid, a great number of complaints from customers would be eliminated and much of the sting in high pressure sales tactics practiced by door-to-door salesmen would be eliminated. Proper testing is needed to determine the type, nature and degree of hearing loss and to decide if in fact the patient actually needs a hearing aid. We urge the FTC to adopt this Trade Regulation Rule as soon as its rule-making authority is restored and we call upon the Congress to expedite this process.

This subcommittee is familiar with some of the problems of hearing impaired Americans. To assist the hard of hearing in restoring their communicative abilities there are a number of devices. For the aged, perhaps foremost among these are devices that permit the hearing impaired to communicate by telephone, an especially important consideration for the many elderly persons who live alone, are homebound, or who have telephone handsets that are incompatible with hearing aid use. Devices such as the "tone-ringer" and "signalman" are also available at modest cost from local telephone companies and provide special auditory or visual signals to the hard of hearing so as to allow for telephone conversation. There also may be some potential in these devices for warning the hearing impaired of pending emergencies or natural disasters. These and other devices, such as the telecoil, directional microphone, glasses aid and audio loop system are most appropriately matched to the individual needs of the hearing impaired.

Of direct interest to the hearing impaired elderly is an agreement between the National Institute on Aging (NIA) and the National Aeronautics and Space Administration (NASA) providing for collaboration in applying technology to help older people with sensory, communicative and motor disabilities. Part of this effort is focusing on a major concern of geriatric medicine - the development of appropriate prostheses, e.g. a special earmold.

We are also aware that the Rehabilitation Services Administration (RSA) within HEW, and specifically RSA's Deafness and Communicative Disorders Office (DCDO) have been less than successful in addressing the vocational rehabilitative needs of the hearing impaired. This is especially true concerning the elderly hearing impaired who are commonly ignored when it comes to vocational rehabilitative services. Our Associations believe it is time the RSA address the comprehensive rehabilitative needs of the hearing impaired. We call on the Congress to adequately and consistently fund RSA's communicative disorders program.

Research Needs

There is a general lack of information and data concerning the hearing impaired elderly. Consequently, there are a number of areas where new and continuing research is needed. Basic research is needed on the biology of aging so as to clarify the fundamental mechanisms of the forms of presbycusis. Pharmacological research is needed on aged subjects (which is seldom done) to help identify ototoxic drugs and develop drugs that help prevent or alleviate presbycusis. It is also important that a typology of hearing loss in old age be established so greater distinction can be made within the broad category of presbycusis. Additional biomedical research is also needed on the causes of presbycusis and the possible association of illnesses such as diabetes and cardiovascular disease with hearing loss in old age. Furthermore, research efforts should focus on those hearing impairments that are basic to the aging process as opposed to those that are a result of many years of environmental stress.

The federal government should continue to sponsor longitudinal studies on the epidemiology of hearing loss, focusing on the correlation between hearing loss and occupation, geographic region, diet and other factors. Socio-behavioral research efforts should focus specifically on the interaction of hearing loss with other problems, for example the onset of paranoid illness and depression. Primary sponsors of these research efforts should logically continue to be the National Institute of Health /NIA and the National Institute of Neurological and Communicative Disorders and Strokes (NINCDS). The NIA should also be allowed to expand its Curriculum Developments grants in geriatrics to facilitate the training of such health professionals as physicians, nurses and audiologists in the age associated problems related to hearing.

Conclusion

Hearing impairment, especially among the aged, may not be as traumatic a condition as deafness but it is far more prevalent and common a characteristic of growing older. Our Associations strongly support the work of NIA and NINCDS in order to further our understanding of the interrelationships between hearing impairment and age. However, because aging is a field few professionals and the general public know little about, it is particularly important that information be disseminated on this topic and that the public be well informed. The NIA has already sponsored a valuable seminar on the topic of "Hearing and the Aged". The NINCDS and National Bureau of Standards have also published excellent booklets on hearing loss and the use of hearing aids. Unfortunately, this kind of information has not been widely disseminated to date. Many elderly individuals still believe that hearing impairment and hearing aids signify a general failing of mental and physical health. And unwittingly, many health professionals reinforce this perception. Well coordinated information efforts can be the most effective means of preventing hearing impairment.

Clearly, many elderly people require some sort of financial assistance in order to have their hearing medically evaluated, and if needed, be properly fitted with a hearing aid. Medicare provides no assistance in this regard and not even the federal/state Medicaid program uniformly provides needed hearing aids to the hearing impaired. In the absence of Medicare reimbursement or private insurance coverage, the federal government should be actively expanding what is at present a very good technical base. Research efforts should be targeted on developing and then promoting an inexpensive, simple and standard hearing aid. At the same time, the Congress should allow the FTC to immediately consider its proposed Trade Regulation Rule. Older Americans often lack knowledge about hearing health and/or hearing aids and are still being taken advantage of - a practice that can be avoided if the FTC promulgates its 30-day "buyers right to cancel rule".

We also believe that this Administration as well as the Congress should closely examine the advisability of allowing the U.S. Food and Drug Administration (FDA) to issue a rule preempting state laws which require that hearing aid candidates have their hearing tested prior to purchasing an aid. In order to eliminate a vast number of complaints from consumers over the purchase of hearing aids, we recommend prior medical consultation and oppose any effort on the part of FDA to allow persons over the age of 18 to unconditionally waive state medical requirements.

We commend the subcommittee for convening this forum and appreciate having had this opportunity to express the views of our Associations on this important and timely subject.

Senator SCHWEIKER. I am sorry, but I just have to get to the other hearing; we are an hour late now. Go ahead, Dr. Fellendorf.

Dr. FELLENDORF. Mr. Chairman, being the last speaker at this time and knowing you are pressed for time, I will do what you have asked all of the speakers to do and keep my remarks to 5 minutes or less.

I do appreciate the opportunity to testify, from two standpoints; one, on behalf of the Consumers Organization for the Hearing-Impaired, which was founded in 1977, and represents both individuals and groups. If we were to include the memberships of all of our affiliated groups, which include the National Association of the Deaf, our membership would be in excess of probably 20,000.

Also, I am speaking as Director of the National Information Center for Quiet, which is federally supported by the Environmental Protection Agency and which is concerned about environmental noise. Certainly, when we are talking about hearing loss and environmental noise, the two are intimately related. I am delighted to be identified at this time as representing those two activities.

I am glad we have the loop, because some of our members who are here today would not have come if I could not have assured them that a loop system would be installed. Otherwise, they would have not had access to my remarks or yours or the other speakers today. So I think that we are striving, as an organization, for equal access, and this demonstration today is certainly a credit to you and your committee and staff for having provided that opportunity.

I will make a part of the record the informational brochures on the Consumers Organization for the Hearing-Impaired and the National Information Center for Quiet, so I will not relate the background associated with those two organizations.

I would say that I was delighted to hear, Senator, that you will cosponsor or sponsor in the Senate House Resolution 5022. We have been seeking a Senate supporter, and I am delighted to hear today that we have found him. I can assure you that that news will be passed along to our members.

Senator **Schweiker**. That was worth the trip here, was it not?

Dr. **Fellendorf**. Absolutely. We should have made it a lot sooner. I am sorry; that is our mistake, not yours.

I would also like to mention a bill that Congresswoman Mikulski has introduced which would provide for tax benefits to those installing TV closed caption devices. I am not sure of the status of that bill in the Senate, but perhaps your staff could——

Senator **Schweiker**. We will look into that, too.

Dr. **Fellendorf**. That is something else that would have distinct advantages in providing access to television as well.

I would like to close by stating that the idea of excessive environmental noise is impacting upon all of us, including those with hearing losses and those with potential hearing losses. I would like to read just briefly from my statement a statement by Dr. Luther Terry, former Surgeon General of the United States and President of the HEAR Foundation, which operates the National Information Center for Quiet.

With respect to noise, he says, "The insidious character of high-level noise exposure is such that it may be weeks, months, years or decades before the total influence and reaction is felt by persons so exposed."

So, in summary, our message to this subcommittee is as follows: Help reduce the incidence of noise-induced hearing loss by supporting efforts to inform the general public, as well as business leaders, of the potentially harmful effects of noise and how to minimize them.

Second, recognize the vast army of hard-of-hearing persons in this Nation by including their special interests and well-being in legislation and in public awareness programs of the Federal, State, and local governments.

In conclusion, may I express my gratitude to the chairman, the members of the subcommittee, and the committee staff for this opportunity to carry out this morning the slogan of the Consumers Organization for the Hearing-Impaired, which is "Every human being has the right to hear and be heard." Thank you.

Senator **Schweiker**. Thank you for your testimony. As you said, I will be pleased to introduce this bill in the Senate very soon, and work with your organization and the other groups here in getting it passed.

[The prepared statement of Dr. Fellendorf follows:]

Testimony
before

The Subcommittee on the Handicapped
Senate Labor and Human Resources Committee

on

HEARING IMPAIRED PROGRAMS

February 6, 1980

George W. Fellendorf, Ed.D.

President, Consumers Organization for the Hearing Impaired, Inc.
and
Director, The National Information Center for Quiet

Mr. Chairman, and members of the Subcommitte on the Handicapped, I am delighted to appear before you this morning on behalf of the Consumers Organization for the Hearing Impaired, Inc., a new national association organized in 1977 to represent and further the interests of all hard of hearing persons in this country. I also will speak in the few minutes allocated for my presentation, from my position as director of The National Information Center for Quiet, an office which has been established with support from the Environmental Protection Agency, to act as national information and referral center on environmental noise.

It is no mere coincidence that I address the subcommittee today with this joint sponsorship of two groups, one concerned with hearing impairment and the other concerned with noise. There is adequate evidence that environmental noise has been gradually destroying the quality of life for many of our citizens. In addition there is substantive research evidence that excessive levels of noise in the workplace and in the community can result in significant hearing losses which are not reversible. Thus noise and hearing loss are intimately related.

In many respects the interests and needs of hard of hearing children and adults have escaped the attention of legislators, administrators, and employers. This is understandable since even the definition of the term "hard of hearing" has been difficult to tie down because such factors as degree of hearing loss, age of onset, use of hearing aids and the attitudes of society may all affect the extent to which a hearing loss is handicapping to a given individual at a given point in time.

The Consumers Organization for the Hearing Impaired includes among its primary objectives the education of the public on the unique problems and potentials of hard of hearing persons. Our members generally have perfectly normal language and speech patterns. Thus they are able to communicate differently from most of those who would be categorized as prelingually deaf. On the other hand, for a hard of hearing person to use the telephone, there is often the need for some type of assistance in order for him to understand an incoming message and respond appropriately. For some, a teletypewriter is necessary just as for severely deaf persons, but for a great majority of hard of hearing persons there is a need for the magnetic coupling that enables them to use their hearing aid telephone coils. For this reason, Senator Schweiker, we are currently seeking favorable action in the House of Representatives on HR 5022 which would require all new telephone installations to be compatible with hearing aid telephone coils. In conjunction with one of our affiliates, The Organization for Use of the Telephone (O.U.T.), we would urge you to consider sponsoring this legislation in the Senate. If passed, this bill would assure that over a period of time no hearing aid user would be denied equal access to the nation's telephone network as is now the case in many parts of the country.

Among our other objectives is the widespread use of the induction loop system such as is in use in this hearing room today. Some of our members in the hearing room today would have not bothered to come if I had not been able to assure them the room would be looped. They would have found themselves denied access to my remarks and yours as well if the loop had not been installed. Thus in the same manner as we now find oral and manual interpreters provided for deaf persons, COHI seeks consistent use of induction loops. We are committed to informing those responsible for holding public meetings, employers, theater owners and operators, churches and similar facilities where people gather, of the need to consider the hard of hearing persons who, given half a chance, will be able to participate as well as the persons with normal hearing.

A further objective is to seek coverage of hearing testing, hearing aid purchase and hearing aid service under Medicare and Medicaid. I would like to make a copy of the COHI brochure a part of my testimony, Senator Schweiker, in order that our full range of purposes and programs may become part of the record of these hearings.

Excessive noise is undoubtedly contributing to the numbers of our population who are now or will be hard of hearing in the future. Noise impacts upon children too in that it interferes with their ability to read and concentrate. Noise is a stressor and we are aware that stress leads to hypertension and thereby becomes a contributing cause to decreasing life expectancy.

All of these auditory and non-auditory health effects of noise, however, may be accumulating without our knowledge. As stated by Dr. Luther L. Terry, President of the H.E.A.R. Foundation, Inc. and former surgeon general of the United States, "The insidious character of high level noise exposure is such that it may be weeks, months, years or decades before the total influence and reaction is felt by the persons so exposed".

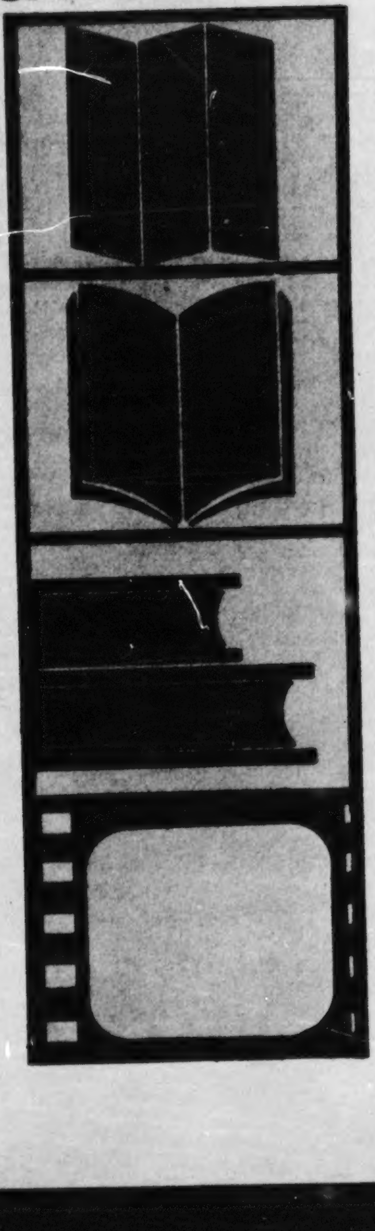
Our message to this subcommittee, then is:

1. Help reduce the incidence of noise-induced hearing loss by supporting efforts to inform the general public as well as business leaders of the potentially harmful effects of noise and how to minimize them, and

2. Recognize the vast army of hard of hearing persons in this nation by including their special interests and well-being in legislation, and in public awareness programs of the federal, state and local governments.

In conclusion may I express my gratitude to the chairman, the members of the subcommittee and the committee staff for this opportunity to carry out this morning the slogan of the Consumers Organization for the Hearing Impaired, Inc.; i.e., Every human being should have the right to hear and be heard.

The National Information Center for Quiet



The National Information Center for Quiet

The National Information Center for Quiet, a federally funded service that acts as a national clearinghouse for the collection and dissemination of information on noise abatement and control, was created to serve both noise control experts and interested citizens. Its existence grew out of the realization that not only does noise lower the quality of life in both urban and rural areas, but it also constitutes a serious health hazard. As the awareness of the environmental problem increased, it became expedient to create a focal point or information center for the dissemination of public information materials on noise and its effects.

In an attempt to meet this need, a consortium of organizations was formed under the name of the National Information Center for Quiet. The organizations that make up the center consist of:

- American Council of Otolaryngology
- American Speech-Language and Hearing Association
- Better Hearing Institute
- Hearing, Educational Aid and Research Foundation
- National Association of Noise Control Officials

In addition to the dissemination of public information materials, increased citizen awareness of noise will be fostered through the Center's development and dissemination of both program-package kits for civic groups and public service announcements. Brochures, lists of films, and referral information on sources of environmental noise as well as the efforts of various communities to reduce noise will be available through the Center. Requests for technical information on industrial noise and on instrumentation for measuring noise levels will be referred to appropriate sources for response.

The Center will conduct an Annual Symposium on Community Noise. This will afford individuals representing numerous national constituencies the opportunity of being instructed in the health effects of noise and possible solutions to these problems and how to organize noise control efforts at the state and local level.

Some typical free publications available from the National Information Center for Quiet are:

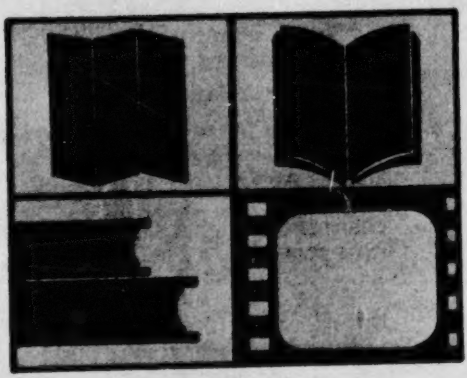
Noise: A Health Problem.	(August 1978) A booklet describing the impact of noise on hearing and health.
Noise and its Measurement.	(February 1977) A pamphlet that describes in simple terms the way humans respond to sound, how sound is measured and the use of ear protectors for those who work in noisy environments.
Noise Around our Homes	(February 1977) A pamphlet that lists home appliances and their noise levels: also describes how to lower noise in the typical home.
Noise at Work.	(February 1977) A pamphlet with a series of panels that discuss the problem of noise in the work-place and what can be done to lessen the problem.
About Sound	A booklet describing the fundamentals of acoustics and noise and how sound is propagated, described, and perceived.
Airport Noise Abatement Planning	(June 1977) A booklet that presents a technique for determining the levels of noise in and around airports for purposes of land use planning and airport regulation.

Noise and Your Hearing	(April 1979) A foldout with a series of information panels for children in grades K-4 to acquaint them with sources of noise and its impact on their health.
Here, Here!	(April 1979) A foldout for children in grades 5-8 that include a series on word games and puzzles all dealing with noise and hearing.
Think Quietly About Noise.	(April 1979) A pamphlet for youths and adults that specifically focuses on noise and its impact on hearing.
Quieting in the Home	A soft cover book that provides helpful, practical techniques to solve many common noise problems.
Noise: A Challenge to the Cities	(May 1978) A reprint of an enlightening article that appeared in *Nation's Cities* and that focuses attention on the sources of noise in cities, the potential impact on the quality of life for those living in cities, and how authorities can cooperate to reduce damaging and annoying noise.
Quiet: Man's Best Friend	(July 1978) Procedures are outlined for an effective water training method to quiet disturbances and nuisance caused by barking dogs.
EPA Noise Control Program — Progress to Date	(April 1979) A description of EPA activities in implementing the Quiet Communities Act of 1978 and Noise Control Act of 1972. Lists of available EPA technical documents and EPA regional noise contacts are also included.
Model Noise Control Ordinance	(November 1975) A basic tool for all communities to use in developing a noise control ordinance suited to local needs and conditions.

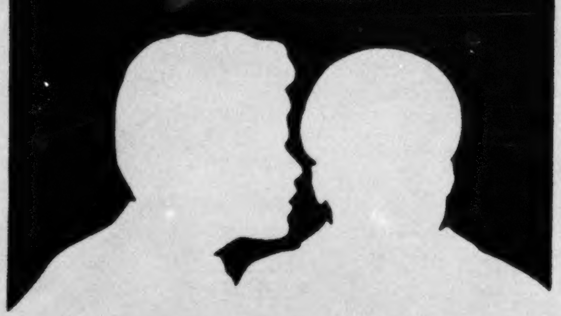
Quiet Communities	(March 1979) A manual focusing on control of noise through effective land use plans and regulation at the local government level.
Protective Noise Levels	Condensed version of EPA "Levels" Document. A document that complements the "Levels" Document, the 1974 report describing levels of noise necessary to protect public health and welfare. It is less technical and easier to understand than the "Levels" Document and could serve as an introduction or supplement to it.

The preceding listing may be periodically revised. If a particular item is no longer available, an appropriate substitution will be made.

Those interested in participating in the nationwide effort to reduce noise pollution, may write to The National Information Center for Quiet for further information and suggestions. Films, video tapes, a speakers bureau and other types of resources are being developed continually, and an up-to-date listing is available.



NOW HEAR THIS!



EVERY HUMAN BEING SHOULD HAVE . . .

THE RIGHT TO HEAR AND BE HEARD!

CONSUMERS ORGANIZATION FOR THE HEARING IMPAIRED, INC.

A national organization committed to
furthering the interests of
hard of hearing persons

Mailing Address:
Post Office Box 166
Owings Mills, Maryland 21117

Tax exempt under Internal Revenue Code
Section 501(c)(3)

Statement of Purposes

- To create a unified national voice for all hard of hearing persons
- To educate the public on the unique problems and potentials of hard of hearing persons
- To clarify the differences between those who are hard of hearing and those who are deaf
- To eliminate misunderstanding and discrimination against hard of hearing workers and job-seekers
- To offer technical assistance and information on the needs and experiences of hard of hearing persons to organizations of consumers, professionals, manufacturers and to government agencies
- To promote more widespread understanding and increased availability of high quality audiologic services, including aural rehabilitation
- To encourage public and private research and demonstration on technical devices; including hearing aids, audio enhancement systems such as Induction Amplification Loops and infra red, closed captioned TV, *and* to ensure accessibility to each by hard of hearing persons
- To have all telephones compatible with hearing aid T-switches
- To form alliances and seek active cooperation with other organizations of consumers and professionals
- To seek coverage of hearing testing, hearing aid purchase and service under Medicare and Medicaid
- To help hard of hearing persons better understand and adjust to their problems through meetings, newsletters and consumer-oriented workshops

A special invitation to join COHI

COHI is for you if you are:

- a hard of hearing person yourself
- a relative or close friend of a hard of hearing person
- a normally hearing person who is generally supportive of hard of hearing persons for professional or personal reasons
- an organization with a concern for those who are hard of hearing

We cordially invite you to become an active member of COHI. Join and help us to advance in areas where there are needs to be defined and action to be taken: for example;

- all telephones should be compatible with hearing aids equipped with T-(telephone) switches — **a good start was made in Maryland, where next?**
- all buildings such as theaters, movies, churches and public auditoriums should someday be equipped with audio amplification systems — **where do we begin and who's to carry the ball?**
- hearing aid costs should come down, and the quality of service should go up — **where are the pressure points to achieve these goals?**
- somebody has to help the general public understand that being deaf and being hard of hearing are not the same — **isn't it about time we got started?**
- professionals, including physicians and educators, need to be reminded of the special interests and problems of hard of hearing persons — **should we begin with your doctor or school principal?**

These are only some of the priorities for the coming year. As an active member you will have a chance to add your support and recommend other goals too.

Every human being, including those who are hard of hearing, has the right to hear and be heard. As a member of COHI, you can help to make this statement a reality.

Margaret Danowski, Chair
Membership Committee

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1979-1980

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Oxon, Hill, Maryland

Senator SCHWEIKER. Again, I would like to thank Senator Randolph, the chairman of this subcommittee, for setting up this hearing and for his interest and work in this area. I know he has very strong feelings about it.

I particularly thank the witnesses here. I think we brought a new focus on the Federal Government its programs on the problems of the hearing impaired that, obviously, has been lacking. I think that our witnesses today gave us some very practical suggestions about how the Government, either through legislation through setting up an engineering center or through more research funding, can take advantage of some unused opportunities.

So I deeply thank all the witnesses for being here. I thought it was a very productive hearing, and certainly the committee is going to follow up on a number of these matters. We appreciate all your comments.

The next hearing of the subcommittee will be held on Monday, March 3. There is one other witness who had a statement; Mr. Winfield's statement will be inserted for the record.

[The prepared statement of Mr. Winfield and additional material submitted for the record follows:]

STATEMENT PRESENTED TO

SENATE SUBCOMMITTEE OF THE HANDICAPPED
OVERSIGHT HEARINGS ON IMPLEMENTATION OF PL 94-142
FEBRUARY 6, 1980

Kenneth J. Winfield
3815 Ridge Road
Annandale, Virginia
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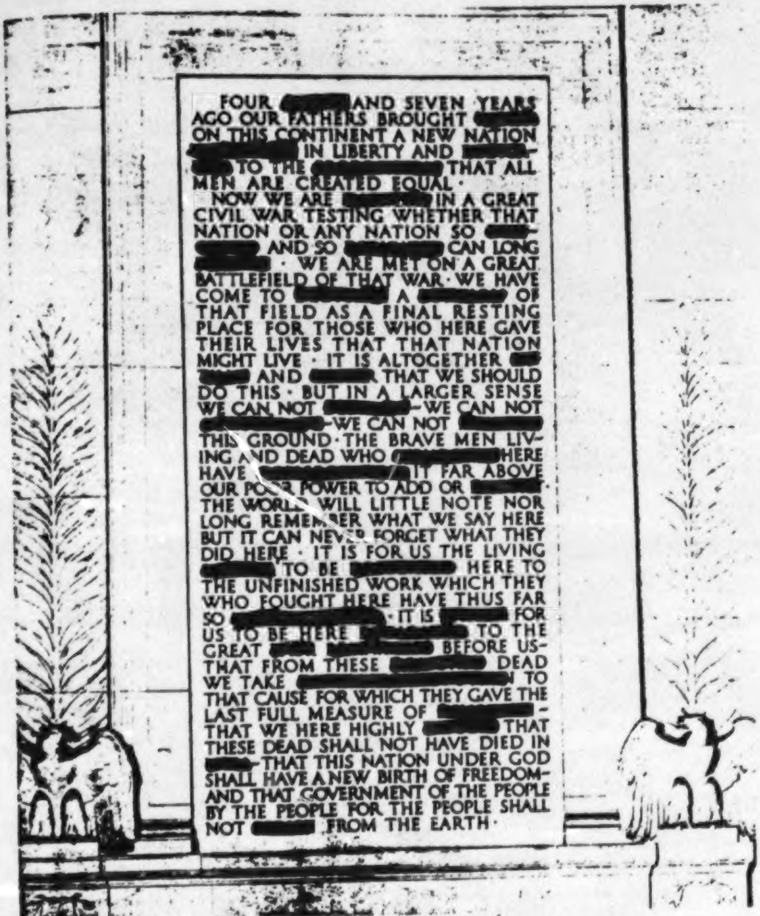

FOUR [redacted] AND SEVEN YEARS
AGO OUR FATHERS BROUGHT [redacted]
ON THIS CONTINENT A NEW NATION
[redacted] IN LIBERTY AND [redacted]-
[redacted] TO THE [redacted] THAT ALL
MEN ARE CREATED EQUAL ·
NOW WE ARE [redacted] IN A GREAT
CIVIL WAR TESTING WHETHER THAT
NATION OR ANY NATION SO [redacted]-
[redacted] AND SO [redacted] CAN LONG
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BATTLEFIELD OF THAT WAR · WE HAVE
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THAT FIELD AS A FINAL RESTING
PLACE FOR THOSE WHO HERE GAVE
THEIR LIVES THAT THAT NATION
MIGHT LIVE · IT IS ALTOGETHER [redacted]
[redacted] AND [redacted] THAT WE SHOULD
DO THIS · BUT IN A LARGER SENSE
WE CAN NOT [redacted]—WE CAN NOT
[redacted]—WE CAN NOT [redacted]
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AND DEAD WHO [redacted] HERE
HAVE [redacted] IT FAR ABOVE
OUR POOR POWER TO ADD OR [redacted] ·
THE WORLD WILL LITTLE NOTE NOR
LONG REMEMBER WHAT WE SAY HERE
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DID HERE · IT IS FOR US THE LIVING
[redacted] TO BE [redacted] HERE TO
THE UNFINISHED WORK WHICH THEY
WHO FOUGHT HERE HAVE THUS FAR
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US TO BE HERE [redacted] TO THE
GREAT [redacted] BEFORE US—
THAT FROM THESE [redacted] DEAD
WE TAKE [redacted] TO
THAT CAUSE FOR WHICH THEY GAVE THE
LAST FULL MEASURE OF [redacted]—
THAT WE HERE HIGHLY [redacted] THAT
THESE DEAD SHALL NOT HAVE DIED IN
[redacted]—THAT THIS NATION UNDER GOD
SHALL HAVE A NEW BIRTH OF FREEDOM—
AND THAT GOVERNMENT OF THE PEOPLE
BY THE PEOPLE FOR THE PEOPLE SHALL
NOT [redacted] FROM THE EARTH ·

LINCOLN'S GETTYSBURG ADDRESS AS IT IS INSCRIBED IN GRANITE ON THE WALL OF THE LINCOLN MEMORIAL IN WASHINGTON, D.C. THE SPEECH WAS DELIVERED NOV. 19, 1863, AT CEREMONIES DEDICATING A PORTION OF THE GETTYSBURG BATTLEFIELD AS A CEMETERY FOR THOSE WHO DIED THERE IN THE BATTLE FOUGHT ON JULY 1, 2 AND 3 OF THAT YEAR

The Gettysburg Address as Read by Andy Winfield,
My Deaf 15 Year-old Son.

Kenneth J. Winfield
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STATEMENT PRESENTED TO

SENATE SUBCOMMITTEE OF THE HANDICAPPED

OVERSIGHT HEARINGS ON IMPLEMENTATION OF PL 94-142

February 6, 1980

I am the father of a profoundly deaf 15-year-old boy.

P.L. 94-142 provides for the parents of the handicapped to be involved in determining the needs of, and developing the special education programs for, their children. The I.E.P. process, the Due Process procedures, and other administrative procedures all recognize the part the parents should play in determining the needs of their child and the special education program which is appropriate to satisfy those needs.

In the same manner, I feel this subcommittee should hear a parent's voice in addition to the voices of the experts in the field, on the programs used for his child's education. The subcommittee should hear a parent's opinion on the adequacy of these programs ... and where they fall. And what a parent feels should be done ... and could be done. In this manner I submit this statement as a parent extremely concerned about one aspect of his deaf child's special education program, and what can be done about it.

Two years ago, in October of 1977, hearings were held on The Computer and the Learning Society, by the Subcommittee on Domestic and International Scientific Planning, Analysis, and Cooperation, of the House Committee on Science and Technology. Robert Herman, Associate Deputy Commissioner of the Bureau of Education for the Handicapped, related in his statement the effort the Bureau is making, through a contract with Teledyne, Corp., to turn speech into instantaneous printed captions on the television for the deaf. As the parent of a deaf child, I should have reacted to this statement with a sense of hope. Instead I shook my head sadly as I thought of my son trying to read the print. As the deaf are nearly illiterate to the written word, so are they language deficient to the spoken word.

The tragedy of the deaf is not the loss of hearing. It is the lack of English language ability. Every aspect of their life in this country centers around the written word: documents, books, papers, forms, licenses, contracts, tests, and on and on ... all written in the English language. It is a language of over a hundred thousand words ... of which they may only know as little as three to five percent. Their understanding of sentence structure, tense, idioms, syntax, multiple concepts of an

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individual word, etc., is minimal ... and to all intents and purposes, almost useless. They need interpreters. Interpreters who have nothing more than a thousand or so signs, plus fingerspelling, to work with. And fingerspelling is worthless when the deaf don't know most of the words being fingerspelled, or the meanings of the idiomatic expression. Interpreting has the same poverty of words and expressions as the Indians in the old western movies. "Me heap big Indian. Me go on warpath." A simple word like call has over 40 uses in my Websters Collegiate dictionary. A normal person can use and understand all of them without even thinking. The deaf can only use a few. Their English language ability satisfies so few of their English language needs, that we can almost say it's non-existent. Our society is based on an ocean of written words. The deaf can only wade along the shores of this ocean. They barely get their toes wet.

So the deaf are excluded from the major part of our society. They live in the ghettos of the deaf; mental ghettos rather then parts of cities, with walls of language that are just as real and impenetrable as the stone walls of medieval times. With their limited language ability and their interpreters, they can venture out of the gates of these ghettos, but they are in a world they barely comprehend. A soundless world of moving lips and written English hieroglyphics.

Inside the walls they function smoothly with an assortment of dialects: sign language, oral, signed English, the Rochester method, an abortive 3rd and 4th grade English, and what have you. These are all restrictive language dialects: drastically limited within themselves, and grossly limited in their ability to translate the concepts of a mature language such as English. The advocates of each dialect are more concerned with the defense of their philosophy and dialects than they are in tearing down the English language wall. Some of the keepers of the ghettos are nothing more than petty bureaucrats and school officials who are only interested in carrying the banner of budget, bureaucratic stability, and faith that their system is the only system. They are not concerned with the actual needs of the deaf. They are not concerned with the effectiveness or the appropriateness of their methods. Fairfax County insists that my deaf son is being properly educated and is in the proper placement, even when a 13-page assignment contained 168 words he did not know. It was a four-day assignment and the only help he had was a dictionary... which he can hardly read. At 15 years old, he had a 4th grade reading level, a 2nd grade vocabulary and was mainstreamed in the 8th grade. He was given B's and C's, even though he wasn't learning a damn thing compared to the hearing students. He was illiterate, and Fairfax County would pass him from grade to grade and graduate him as an illiterate.

Remedial English language instruction, on a concentrated basis, is the only thing that will give my son normal, or near normal, English language ability so he can leave the ghetto of the deaf and function in the normal world. He doesn't have to hear, but he does have to read. An illiterate that can hear, can function to a large degree .. and can overcome his illiteracy if he wishes. An illiterate that cannot hear ... such as my son and other deafs, have had it when they leave school.

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For a year and a half, I have tried to get Fairfax County to give my son remedial English language instruction. They not only ignore me, they ignore my requests for a due process hearing and an independent educational evaluation. They are contemptuous of me and my objectives, and of P.L. 94-142, and its objectives. I won a court case and on September 14, 1979, the judge signed an order requiring them to give my son an independent educational evaluation. It is now 6 months later, I have still not had that evaluation. They circumvent the provisions of P.L. 94-142 by procrastination, pigeon-holing my letters, dodging the issues by ignoring the substance of my letters, feigning ignorance at the meaning and intent of a very simple sentence in the Federal regulations, and use every other means to delay and avoid any action. They masterfully excell at inaction.

My son is 15 years old. He cannot wait until I win my case with Fairfax County. The Special Education Department of Fairfax County is totally unconcerned with his needs and with the law. They will use every delaying action possible to avoid changing their curricula ... even if it's totally inadequate to meet the needs of handicapped children. The budget and their bureaucratic independence comes first. They are not going to have me, the laws of Congress, or their County Rules and Regulations tell them what to do. And they do ignore their own county rules and regulations to the same extent that they ignore the laws of Congress.

My son's need for remedial English language instruction cannot wait ... so I will have to teach him myself. I realized this 6 months ago, and have been planning the teaching techniques I will use ever since.

Most of the teaching techniques I will use are standardized teaching methods that are used outside of deaf education, and are proven and reliable methods. For written English language, I will use computer assisted instruction (CAI), English as a Second Language (ESL), and phrase reading techniques from speed reading. For oral English, I will use Cued speech with ESL.

I have just received a $19,000 computer system. It has an extremely advanced word processing system with a 250-page capacity, and can handle the sophisticated instructional methods that will be needed. The use of this computer will enable my son to have individualized instruction based on his needs and speed of work. It will have self-testing and other controls so that we may follow his development and modify the program according to his needs.

The programming will be done by a company (Linguametics, Inc., of Rockville, Md.) which is developing techniques relative to foreign languages. The instructional techniques I intend to use will tie in with the work they are doing, so that the programs we develop will be mutually beneficial.

Teachers in two schools for the deaf who are working with deaf computer instruction systems have offered to cooperate with me in any way possible. And they want to be kept up to date on any instructional methods

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we develop, which promise to be far more sophisticated than the methods they are using, and offer a greater potential.

An audiologist, that specializes in testing the deaf to determine their area of language capabilities and disabilities, has offered to act as a consultant. She will also do periodic tests on my son to determine his rate of progress and the problem areas that we will need to address. I also have two teachers that will consider working full time on the instructional packages, if I can arrange it.

With the help of those above, and possible others, I intend to develop a series of comprehensive and structured courses in English language development for the deaf. As I have said, most of the techniques that I will use are standardized teaching techniques in other fields of education. With proper modification, they should be effective techniques for teaching the deaf.

The primary objective of these courses will be to subject the deaf to total immersion in non-restrictive English language on a concentrated basis. They will emphasis comprehensive development of the context of words and phrases, rather than direct dictionary definitions. They will attempt to make them think in the English language ... not merely translate it from sign language. The three initial courses will be:

I. Computerized typing instruction:

- -Teach speed and accuracy with computer
- -Teach concentration on every letter, word, and phrase
- -Develop a rapid recognization vocabulary on high frequency words and phrases.

II. Computerized English as a Second Language:

- -Standardized instructional methods being used for foreign students
- -Sophisticated programming using continuous testing and feedbacks to amplify work in problem areas and decrease workload in non-problem areas.

III. Computerized reading:

- -High interest reading material with a totally unrestricted vocabulary. Would include reading material chosen by pupil, newspapers, periodicals, etc., plus required reading material selected on a basis of language content. My son wants me to put "Lord of the Rings" into the computer!

- -"Phrase-reading," a speed-reading technique, will be used initially with all reading material. It will be used to develop the automatic grouping of words into thought and context patterns.

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-Full comprehension will be sought by the inclusion of the following:

a. Word dictionary: difficult words in the reading material will be subscripted with a "d" to indicate its inclusion in the computer dictionary. Requests for its definition will give it in the context used in the text.

b. Idiom dictionary: Idiomatic expressions will be indicated with the subscript "i," indicating that they will be in the computer idiom dictionary.

c. Reading comprehension tests: spaced periodically in the required reading tests to test comprehension.

d. Word and idiom comprehension test: periodic flashbacks to words and idioms requested from dictionaries to assure comprehension and reinforce long-term memory.

e. Analysis section: continuing analysis of problem areas being experienced by student.

IV. Cued speech simultaneous with computerized ESL

The computer techniques required for the above courses are feasible; part of the programming has already been done. The instructional material input is critical, and must be done emperically, using as a base existing formats used with foreign language students and modified according to the information shown by the computer and observation.

I intend to use these courses to teach my son. His need cannot wait until they are fully developed and analyzed, so he will use them as they are being developed. All three courses will be developed simultaneously.

My son is now at the Model Secondary School for the Deaf. I have asked for their cooperation in the form of reducing his work load to allow me to substitute for his English courses 3 to 4 hours of computer work at home.

This program, when it is fully developed and shown to be effective, will also be applicable for use in the Continuing Education of Deaf Adults. It is a program for individualized and independent education, placing minor reliance on the presence of an instructor. The programs can be stored in a central computer bank, and the adult deaf could have access to it with cheap home terminals. They could work with it at their own speed and their own need. Unlimited instructional material and reading material could be accessible to them. Current news and excerpts from newspapers and periodicals, such as Time, could be available to them on a daily basis ... along with the built-in dictionary.

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I submitted this statement because I believe two things:

I. The biggest handicap of the deaf is lack of English language ability ... not the lack of hearing. Every deaf person needs concentrated remedial English language instruction. Not restrictive language instruction that only allows them to function at a 3rd or 4th grade level, and within the ghettos of the deaf, but unrestrictive language instruction that allows them to go out into the world, and be a part of it.

II. A computer-based system, using English as a Second Language and other modern teaching techniques can definitely be effective for individualized teaching of the deaf according to their need ... and can make them competent in the English language. This is what I intend to show with my son ... and any others I can get to participate in the program.

Addendum to

Testimony Before the Senate Subcommittee on the Handicapped
Regarding
PUBLIC LAW 95-602

by

John E. D. Ball
President
National Captioning Institute, Inc.

February 6, 1980

Mr. Chairman, I appreciate this opportunity to provide an update on closed captioning of television programs for hearing-impaired Americans. The term "closed" means that the captions are invisible unless displayed by means of special decoding equipment. "Open" captions, on the other hand, appear on all television screens whether wanted or not. The objections of hearing viewers who found open captions distracting led to development of the closed-captioning system for the benefit of the hearing-impaired population. Since its inception in 1973 as a research/development project at the Public Broadcasting Service, closed captioning has enjoyed active support from many sectors including the United States Congress.

As a result of these cooperative efforts, the National Captioning Institute (NCI) has now been established as a nonprofit corporation which will add closed captions to selected prime time television programs before broadcast. NCI headquarters and the Captioning Operations Center-East were opened last year in suburban Northern Virginia. Because close proximity to television network facilities and program producers is critical to the task of captioning, a second Captioning Operations Center (West) has been located in Los Angeles. Using unique caption-editing consoles and highly trained caption-editors, these two facilities will caption a total of at least 20 hours per week of commercial and public network programs by the end of 1980.

ABC, NBC, and PBS are participating in providing this significant new service to millions of hearing-impaired people of all ages who have historically been denied full access to television. Beginning March 16 of this year, viewers who have the special decoding equipment will be able to watch prime time programs with captions every week in their own homes.

The equipment for decoding closed captions into visible captions on home television sets is being marketed by Sears, Roebuck and Co. in two versions. The adapter unit, which can easily be plugged into any television receiver, will be available in March through Sears catalog sales nationwide at a price of $249.95 plus tax and shipping costs. By July, the "integrated receiver" version will be available. This is a 19" color set with decoding equipment built inside. It will first be offered through Sears catalog sales at $519.95 and by next fall in selected retail outlets at a slightly higher price. Sears, Roebuck and Co. entered into an agreement with NCI to market the decoding equipment on a very low profit margin.

Despite best efforts to keep the price of decoding equipment as low as possible, there is concern that a great many people who need it cannot afford to buy it. Federal legislation providing tax relief would be of enormous benefit to deaf individuals who by virtue of their handicap fall into the lower income groups. Bills which propose tax credit for purchasers of decoding equipment have been introduced in both the Senate and the House of Representatives. S. 1869 (Mr. Leahy, Mr. Randolph, and others) proposes 50 percent tax credit and is part of a package entitled "Equal Access to Communications Act of 1979." H.R. 4767 (Ms. Mikulski, Mr. Harkin, and others) proposes full tax credit. Hearing-impaired citizens nationwide are hopeful that the Congress will act soon to provide tax relief retroactively. Closed captioning can bring the world of television into their lives--for the first time in many cases.

Senator **Schweiker**. The subcommittee will stand in recess.

[Whereupon, at 12:56 p.m., the subcommittee was adjourned, to reconvene on March 3, 1980.]

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